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## SIPR Environmental Monitoring Report 2

Grangegorman Development Agency

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# GRANGEGORMAN



## SITE INFRASTRUCTURE & PUBLIC REALM WORKS

### *Environmental Monitoring Report No 2*

#### *Noise, Vibration & Dust*

#### DOCUMENT REFERENCE RB-GDA-EMR-02

<i>Rev</i>	<i>Date</i>	<i>Reason for Revision</i>
R01	27-01-2014	Issued for Review

<i>Authorisation Record</i>		<i>Roadbridge</i>	<i>Roadbridge</i>	<i>Clients Representative</i>
				
<i>R01</i>	<i>27-01-2014</i>	<i>T Cosgrave</i>	<i>A O Rourke</i>	<i>B O Rourke</i>
<i>Rev</i>	<i>Date</i>	<i>Prepared by</i>	<i>Recommended by</i>	<i>Received by</i>

## Contents

1.0	Introduction.....	2
2.0	Related Documents.....	2
3.0	Summary of Results.....	3
3.1	Noise .....	3
3.2	Vibration .....	3
3.3	Dust.....	3
4.0	Schedule of Environmental Monitoring Stations.....	4
5.0	Location map of Environmental Monitoring Stations.....	6
6.0	Environmental Measurements Monitoring Reports.....	8
7.0	Instrument Specification Sheets .....	86
8.0	Instrument Calibration Certs.....	91
9.0	Photographs .....	98

## 1.0 Introduction

Environmental Measurements (EM), Unit 12, Tallaght Business Centre, Whitestown Business Park, Dublin 25, have been appointed to carry out noise, vibration & dust monitoring on behalf of Roadbridge.

All monitoring shall be carried out in accordance with Method Statement RB-GDA-MS-26.

Data included in this report relates to three locations where noise, vibration & dust monitoring have been carried out. The locations were jointly agreed between OCSC, RB & EM which are:-

- Station 1 – Laundry Building (dust monitoring only)
- Station 2 – Mortuary Building
- Station 3 – C of I Church
- Station 4 – Energy Building

A schedule of Environmental monitoring stations and a location map are included in this report.

As agreed a fourth station was setup on the 9<sup>th</sup> of Dec by where, the equipment from station 1 was removed and placed at the Energy Building adjacent to the Phoenix Centre. Data for this location shall be included in next month's report.

Site operating hours for this monitoring period were from 7am to 6pm.

Dust monitoring has been setup and the same four locations, by means of Bergerhoff Dust Deposit Gauge.

## 2.0 Related Documents

- Conditions set out in Planning Grant Order No. P2693
- Volume A – Works Requirements, Specification Appendix 1/9 & 29
- EIS Volume 2 (mainly chapter 8)
- Method Statement RB-GDA-MS-26



### **3.0 Summary of Results**

All three stations are located within the Grangegorman Development Site which have been placed in close proximity to the boundary wall/fence-line. Therefore the data received is a record of noise and vibration resulting from activities inside & outside the site boundaries.

#### **3.1 Noise**

The results for this monitoring run show that they are within the existing ambient noise levels (Leq) as per Specification Appendix 1/9.

#### **3.2 Vibration**

The data gathered for this monitoring period shows that the results are below the level of vibration required to have a potential for cosmetic damage to a structure or building as per BS 7385 Part 2 1993.

#### **3.3 Dust**

Details of dust analysis shall be included in the next report. Dust bottles have been lifted & sent for analysis on the 20<sup>th</sup> January.

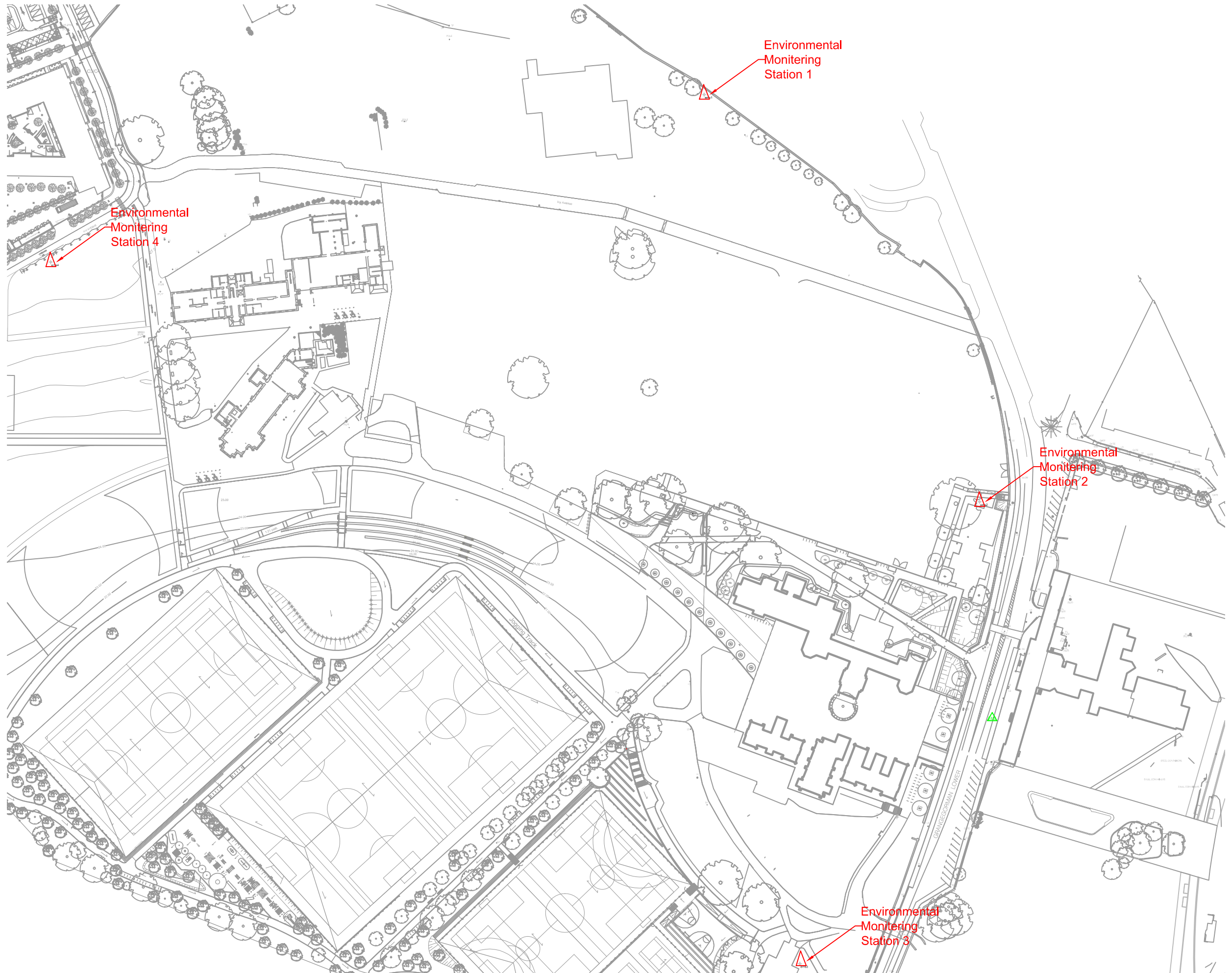
## 4.0 Schedule of Environmental Monitoring Stations

### Schedule of Environmental Stations

**Updated: 20th Jan 2014**

[illegible]

## 5.0 Location map of Environmental Monitoring Stations



## 6.0 Environmental Measurements Monitoring Reports

**Report Noise and Vibration Stn.2 Mortuary Building  
Grangegorman**

**for Roadbridge**

**Project: Site Infrastructure & Public Realm Works**

**Monitoring Period: 9 Dec 2013 to 9 Jan 2014**

<b>Revision</b>	<b>Prepared By</b>	<b>Date</b>	<b>Approved</b>	<b>Date</b>
<b>01</b>	<b>K. O'Brien</b>	<b>9 Jan 2014</b>	<b>MH</b>	<b>10 Jan 2014</b>

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## **Contents**

1. Introduction.....	4
2. Methodology .....	4
2.1 Vibration .....	4
2.2 Noise .....	4
3. Results .....	5
3.1.1 Vibration : Located at the Mortuary Building, Grangegorman.....	5
3.2.1 Noise : Located at the Mortuary Building, Grangegorman. ....	8

## **1. Introduction**

At the request of Roadbridge, our company Environmental Measurements has carried out noise and vibration monitoring at the Mortuary Building, Grangegorman, Dublin.

The purpose of the survey was to:

1. Measure the noise and vibration levels impacting on the Mortuary Building while Roadbridge carried out works as part of the Grangegorman redevelopment.

## **2. Methodology**

### **2.1 Vibration**

One Instantel Model MiniMate Plus vibration monitor was installed at the Mortuary Building.

This monitor is a triaxial velocity meter which measures peak particle velocity (ppv) in mm/sec together with the frequency at peak. This allows for the calculation of acceleration and displacement at peak.

A specification sheet for the Instantel Model Mini Mate Plus accompanies this report.

### **2.2 Noise**

One Larson Davis Model 812 noise monitor was installed at the Mortuary Building.

This monitor is an integrating sound level meter which measures the standard sound level parameters of Leq, Max, Min, Pk, UnwPk and Lns.

A specification sheet for the Larson Davis Model 812 accompanies this report.

### **3. Results**

#### **3.1.1 Vibration : Located at the Mortuary Building, Grangegorman.**

Monitoring covers the period from 9 Dec 2013 to 9 Jan 2014. A Peak Particle Velocity (PPV) of 1.90mm/sec was recorded during this monitoring run.

This level is below the level of vibration required to have potential for cosmetic damage.  
Ref: BS 7385 Part 2 1993 Evaluation and measurement for vibration in buildings.

Please note that the data for the period 9 Dec to 16 Dec 2013 is not available due to problems at the download.



## Event Report

<b>Histogram Start Time</b>	14:49:32 December 16, 2013	<b>Serial Number</b>	BE9246 V 10.52-8.17 MiniMate Plus
<b>Histogram Finish Time</b>	14:04:22 January 3, 2014	<b>Battery Level</b>	6.9 Volts
<b>Number of Intervals</b>	5174 at 5 minutes	<b>Calibration</b>	April 22, 2013 by Instantel
<b>Range</b>	Geo :254 mm/s	<b>File Name</b>	K246F42B.UK0
<b>Sample Rate</b>	1024sps		

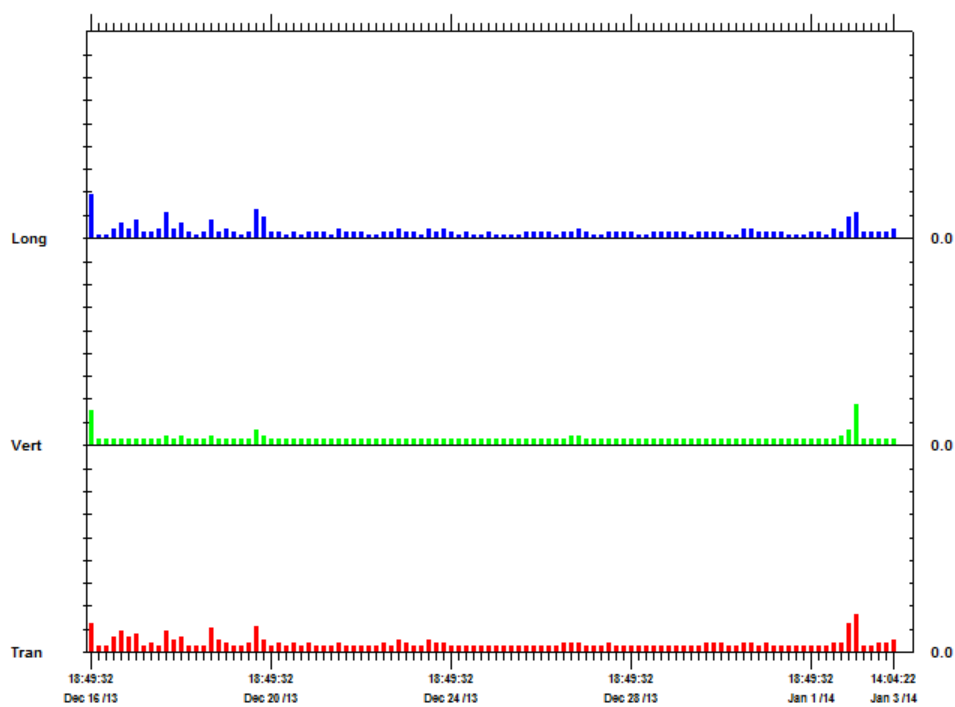
## Notes

## Post Event Notes

Client: Roadbridge  
 Location: The Mortuary Bdg, Grangegorman  
 User: Environmental Measurements

	Tran	Vert	Long	
PPV	1.65	1.78	1.90	mm/s
ZC Freq	32	34	22	Hz
Date	Jan 2 /14	Jan 2 /14	Dec 16 /13	
Time	14:59:32	15:19:32	15:44:32	
Sensorcheck	Passed	Passed	Passed	

Peak Vector Sum 2.17 mm/s on January 2, 2014 at 14:59:32



Printed: January 13, 2014 (V 8.12 - 8.12)

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## Event Report

**Histogram Start Time** 14:17:46 January 3, 2014  
**Histogram Finish Time** 14:13:19 January 9, 2014  
**Number of Intervals** 1727 at 5 minutes  
**Range** Geo :254 mm/s  
**Sample Rate** 1024sps

**Serial Number** BE9246 V 10.52-8.17 MiniMate Plus  
**Battery Level** 7.0 Volts  
**Calibration** April 22, 2013 by Instantel  
**File Name** K246F4ZM.DM0

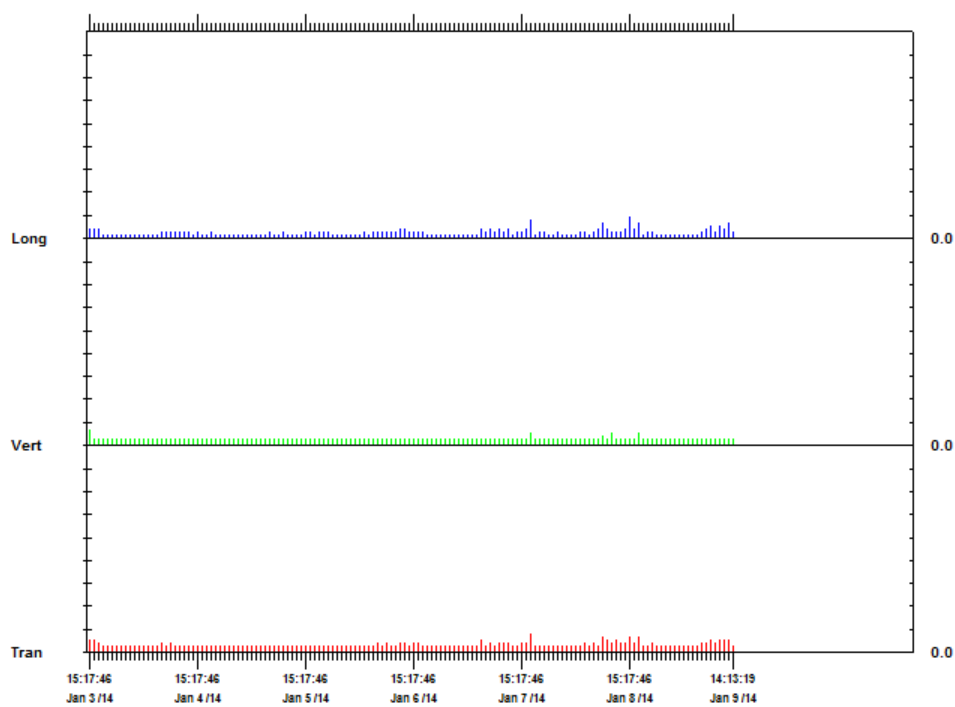
### Notes

### Post Event Notes

Client: Roadbridge  
 Location: The Mortuary Bdg, Grangegorman  
 User: Environmental Measurements

	Tran	Vert	Long	
PPV	0.762	0.635	0.889	mm/s
ZC Freq	26	47	24	Hz
Date	Jan 7 /14	Jan 3 /14	Jan 8 /14	
Time	16:42:46	14:22:46	14:32:46	
Sensorcheck	Passed	Passed	Passed	

**Peak Vector Sum** 1.03 mm/s on January 8, 2014 at 14:32:46



Time Scale: 1 hour /div Amplitude Scale: Geo: 1.000 mm/s/div

Printed: January 13, 2014 (V 8.12 - 8.12)

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### 3.2.1 Noise : Located at the Mortuary Building, Grangegorman.

Monitoring covers the period from 9 Dec 2013 to 9 Jan 2014.

Date	Time	Duration	Leq	Lmax	Lmin	L( 5)	L(10)	L(50)	L(90)
09Dec 13	15:43:49	970.2	61.2	83.5	50.8	66.7	64.6	57.3	53.5
09Dec 13	16:00:00	3600	58.7	77.6	44.6	63.9	61.7	55.7	51.3
09Dec 13	17:00:00	3600	53.8	69.7	41.8	61	58.2	45.1	42.8
09Dec 13	18:00:00	3600	53.3	68.8	41.3	61	57.8	44.8	42.4
09Dec 13	19:00:00	3600	52.8	71.3	42	60.3	56.5	44.4	43.1
09Dec 13	20:00:00	3600	50.2	70	41.6	57.1	52.1	43.8	43
09Dec 13	21:00:00	3600	50.4	70.3	42.4	57	52.5	44.4	43.2
09Dec 13	22:00:00	3600	47.3	69.9	41.1	50.1	45.9	43.4	42.2
09Dec 13	23:00:00	3600	45.9	67.2	40.9	46.6	45.1	42.5	41.5
10Dec 13	00:00:00	3600	45.3	63.6	41	45.4	43.9	42.6	42
10Dec 13	01:00:00	3600	45.1	68.4	40.7	45.7	44.3	43	42.1
10Dec 13	02:00:00	3600	43.6	57.7	41.2	45	44.5	43.3	42.3
10Dec 13	03:00:00	3600	45	67.8	41.8	46.3	45.5	43.9	43.1
10Dec 13	04:00:00	3600	44.6	60.1	42.7	46.2	45.5	44.2	43.2
10Dec 13	05:00:00	3600	47.1	66.3	43.1	49.5	46.8	44.7	44.1
10Dec 13	06:00:00	3600	51.8	76.1	43.7	57.6	54.8	46.1	44.6
10Dec 13	07:00:00	3600	60.1	87.8	44.7	64.5	62.8	55.3	46.8
10Dec 13	08:00:00	3600	60.9	70.9	49.4	65.2	64.2	59.6	54.9
10Dec 13	09:00:00	3600	63.1	94.8	47.1	68	65.8	57.6	52.1
10Dec 13	10:00:00	3600	64	93.2	44.3	70	67.7	56.1	46.5
10Dec 13	11:00:00	3600	65.3	87.7	51.6	71.5	69.3	60.4	56.1
10Dec 13	12:00:00	3600	63.5	81.3	47.6	68.4	66.7	61.4	55.1
10Dec 13	13:00:00	3600	58.4	76.8	42.6	64.3	62.4	53.1	45.8
10Dec 13	14:00:00	3600	74.2	89.1	48.1	81.6	79	67.4	57.7
10Dec 13	15:00:00	3600	77	89.5	52.6	83.7	82.5	70.6	62
10Dec 13	16:00:00	3600	77.3	87.7	44.8	84.4	83.4	64.3	49.3
10Dec 13	17:00:00	3600	54.4	69.7	43.2	61.2	59	46.9	44.4
10Dec 13	18:00:00	3600	53.7	73.3	43.2	60.4	57.4	46.3	44.4
10Dec 13	19:00:00	3600	52.2	66.7	42.1	59.4	56.6	44.9	43.2
10Dec 13	20:00:00	3600	52.6	83.6	41.8	58.6	55.3	44	42.9
10Dec 13	21:00:00	3600	49	66.1	42.1	54.7	49.3	43.7	42.6
10Dec 13	22:00:00	3600	48.3	67.5	41.7	52.8	49.1	44.2	43.2
10Dec 13	23:00:00	3600	47.7	67.6	42.2	50.7	47.4	44.4	43.3
11Dec 13	00:00:00	3600	46.3	66.6	41.6	48.3	45.9	43.9	43.1
11Dec 13	01:00:00	3600	44.9	62	41.3	45.8	44.2	42.9	42.2
11Dec 13	02:00:00	3600	43.2	57.3	41.2	44.4	43.9	42.9	42.2

11Dec 13	03:00:00	3600	44.5	67.1	41.6	45	44.5	43.1	42.2
11Dec 13	04:00:00	3600	45.1	65.2	41.7	45.8	44.8	43.4	42.3
11Dec 13	05:00:00	3600	45.4	65.3	42.3	45.7	44.9	43.9	43.2
11Dec 13	06:00:00	3600	50.7	68.4	42.9	56.9	53.3	45.2	44.1
11Dec 13	07:00:00	3600	61.2	81.3	43.8	66.5	64.6	56.6	45.2
11Dec 13	08:00:00	3600	65.6	81.3	52.3	69	68.1	64.9	59.7
11Dec 13	09:00:00	3600	63.8	82.8	45.1	69.1	66.7	60.7	55
11Dec 13	10:00:00	3600	59.8	76	45.1	65.1	63.3	56.5	48.8
11Dec 13	11:00:00	3600	60.6	78.4	46.5	65.9	63.7	57	51.9
11Dec 13	12:00:00	3600	59.2	74	48.2	64.6	62.8	56.8	52.6
11Dec 13	13:00:00	3600	57.2	69.3	44.8	62.9	61.3	54.1	48
11Dec 13	14:00:00	3600	73.8	83.9	48.7	79.8	79	63.4	55.6
11Dec 13	15:00:00	3600	57.3	72.4	45.6	63.2	61.1	53.5	48.6
11Dec 13	16:00:00	3600	60.5	79.4	46.9	65.2	63.6	58.1	52.4
11Dec 13	17:00:00	3600	56.2	70.6	44.5	62.5	60.6	51.9	46.5
11Dec 13	18:00:00	3600	54.7	69.4	44.6	61.5	59.1	48.6	46.1
11Dec 13	19:00:00	3600	54.3	71.2	44.7	61.1	58.6	48.3	46.2
11Dec 13	20:00:00	3600	52	68.4	44.4	58.2	54.9	47.5	45.6
11Dec 13	21:00:00	3600	51.2	69.7	44.2	56.7	52.8	46.8	45.3
11Dec 13	22:00:00	3600	49.9	67.8	44.2	54.4	48.9	45.8	45.1
11Dec 13	23:00:00	3600	49.1	69.8	43.8	51.3	47.7	45.5	44.5
12Dec 13	00:00:00	3600	47.2	66.7	43.1	48.8	46.9	44.8	44
12Dec 13	01:00:00	3600	45.3	65.5	42.9	46.4	45.6	44.4	43.4
12Dec 13	02:00:00	3600	45.8	68.1	42.8	45.6	45	44.4	43.4
12Dec 13	03:00:00	3600	45.2	65.7	42.1	45.8	45	43.8	43.1
12Dec 13	04:00:00	3600	44.9	65.3	42	45.5	44.8	43.7	43.1
12Dec 13	05:00:00	3600	49.2	73.5	41.6	56	51.3	44.3	43.1
12Dec 13	06:00:00	3600	50.2	70.9	42.5	54.8	51.6	45.2	44.1
12Dec 13	07:00:00	3600	58.3	77.9	44.1	63.7	61.6	53.5	46.9
12Dec 13	08:00:00	3600	60.8	77.1	47.1	65.4	63.8	58.8	52
12Dec 13	09:00:00	3600	58.6	77.5	45.5	64.4	62.9	54.3	48.6
12Dec 13	10:00:00	3600	55.9	76.1	44.6	62.2	60.2	50.5	46.4
12Dec 13	11:00:00	3600	58.4	76.2	45.2	63.5	62	56.3	49.6
12Dec 13	12:00:00	3600	59.7	74.7	45.8	64.5	62.9	57.6	54
12Dec 13	13:00:00	3600	57.9	74.2	44.3	62.9	61.6	55.6	47.3
12Dec 13	14:00:00	3600	60.3	80.4	49.3	64.6	63.4	58.9	54.6
12Dec 13	15:00:00	3600	59.3	74.3	49.9	63.5	62.1	57.9	54.5
12Dec 13	16:00:00	3600	58.2	72.5	44.8	62.8	61.3	56.8	51
12Dec 13	17:00:00	3600	53.9	70.8	43.3	60.8	58.8	47.3	44.6
12Dec 13	18:00:00	3600	53.3	69.5	42.9	60.5	57.4	45.8	44.1
12Dec 13	19:00:00	3600	52.8	67.5	43.2	60.1	57.4	46.1	44.3
12Dec 13	20:00:00	3600	50.8	69.8	42.6	57.2	53.1	45.2	44.1
12Dec 13	21:00:00	3600	51.1	69	42.1	58.3	54.1	44.4	43.2
12Dec 13	22:00:00	3600	48.2	70.7	42	52.8	47.3	43.7	43

12Dec 13	23:00:00	3600	47.9	66.8	41.7	52.9	46	43.2	42.2
13Dec 13	00:00:00	3600	46.3	64.4	42	47.2	45	43.6	42.7
13Dec 13	01:00:00	3600	47	66.4	42.6	48.1	45.4	43.9	43.2
13Dec 13	02:00:00	3600	45.6	64.7	42.4	47.2	45.9	44.3	43.2
13Dec 13	03:00:00	3600	47.2	77.2	42.1	49	47	44.2	43.1
13Dec 13	04:00:00	3600	47.5	66.6	42.9	51.6	48.8	45	43.9
13Dec 13	05:00:00	3600	49.4	71.2	42.6	55.4	54.6	44.9	43.7
13Dec 13	06:00:00	3600	52.3	71	43.2	57.6	53.9	46	44.4
13Dec 13	07:00:00	3600	58.7	77.5	44.1	63.9	62.5	56.6	46.5
13Dec 13	08:00:00	3600	63.2	84.9	50.2	68.1	65.6	60.4	55.3
13Dec 13	09:00:00	3600	65.2	88.5	44.7	70.3	68.9	62.2	51.4
13Dec 13	10:00:00	3600	59.6	76.3	41.3	64.8	63.4	57.5	46.2
13Dec 13	11:00:00	3600	62.2	90.7	49.8	66.3	64.7	59.5	55.7
13Dec 13	12:00:00	3600	71.5	108.4	44.4	72.7	68.4	60.7	55.5
13Dec 13	13:00:00	3600	66.3	89.4	43.2	71.6	70.1	60.4	46.6
13Dec 13	14:00:00	3600	66.6	92.2	49.3	70.6	69.6	63.2	56.4
13Dec 13	15:00:00	3600	62.7	77.9	51.3	67.6	66	60.9	56.8
13Dec 13	16:00:00	3600	59.9	81.6	42.4	65.4	63.9	57.3	48.9
13Dec 13	17:00:00	3600	56.7	82.5	41.6	63.3	61.2	49.3	43.9
13Dec 13	18:00:00	3600	56.6	73.8	41.3	63.7	61.3	48.9	43.8
13Dec 13	19:00:00	3600	57.2	80.3	42.1	64.2	61.6	48.7	44.2
13Dec 13	20:00:00	3600	56.1	79.2	42.2	62.6	60.1	49.4	44.5
13Dec 13	21:00:00	3600	54.7	74.4	40.8	61.8	58.4	46.9	43.3
13Dec 13	22:00:00	3600	52.3	70.9	40	59.2	55	44.8	41.7
13Dec 13	23:00:00	3600	48.1	69.4	39.1	52.3	46.4	41.9	40.6
14Dec 13	00:00:00	3600	48.4	69.4	38.6	53.4	49.3	41.8	40.3
14Dec 13	01:00:00	3600	46.9	66.7	38.8	47.8	44	41.5	40.3
14Dec 13	02:00:00	3600	45.7	70	36.2	44	42	40.1	38.2
14Dec 13	03:00:00	3600	45.2	66.9	34.7	48.8	44	39.6	37.4
14Dec 13	04:00:00	3600	44.8	64.3	37.3	46.6	43.2	40.3	38.8
14Dec 13	05:00:00	3600	48.6	74.3	37.7	54	50.8	43.9	40.5
14Dec 13	06:00:00	3600	54.3	75	38.3	60.9	57.8	48.5	43.1
14Dec 13	07:00:00	3600	52.5	72.2	39.6	58.4	55.1	46.6	42.9
14Dec 13	08:00:00	3600	54.7	78.9	40.1	61.4	58.2	48.6	44
14Dec 13	09:00:00	3600	61.5	87.4	44.9	66.8	64.5	56.3	49.9
14Dec 13	10:00:00	3600	59.1	82.8	46.8	64.4	62.5	55.6	51.1
14Dec 13	11:00:00	3600	62.7	85.8	49.1	67.9	65.7	58.6	53.3
14Dec 13	12:00:00	3600	63.8	89	46.8	68.6	66.2	58.8	52.9
14Dec 13	13:00:00	3600	62.9	87.1	47.4	67.8	65.5	59.1	53.3
14Dec 13	14:00:00	3600	63	87.7	46.9	68.3	65.8	58.7	52.7
14Dec 13	15:00:00	3600	62.5	87.3	47.9	67.6	65	57.4	52.3
14Dec 13	16:00:00	3600	58.4	83.4	43	64	61.5	51.9	47.1
14Dec 13	17:00:00	3600	54.7	75.7	41.5	61.5	58.7	48	44
14Dec 13	18:00:00	3600	52.7	69.8	40.2	60.3	55.9	44.6	42.1



14Dec 13	19:00:00	3600	53.1	69.4	38.7	60.7	56.7	43.6	41.3
14Dec 13	20:00:00	3600	50.7	73.1	40.3	57.2	52.3	44.1	42.3
14Dec 13	21:00:00	3600	51.2	70.4	40.3	57.8	54.2	44.6	42.2
14Dec 13	22:00:00	3600	54.2	81.1	39.3	59.9	56.4	46.6	42.5
14Dec 13	23:00:00	3600	56.7	81.6	41	62.6	59.1	48.5	44.2
15Dec 13	00:00:00	3600	53.9	78.7	39	59.7	56.4	45.9	42.2
15Dec 13	01:00:00	3600	48.3	70.2	39.1	53.7	50.2	42.9	40.9
15Dec 13	02:00:00	3600	47	68.7	38.8	50.9	47.7	42.8	41.1
15Dec 13	03:00:00	3600	45.6	66.1	36.5	47.6	44.7	41.3	38.6
15Dec 13	04:00:00	3600	47.6	68.6	32	53.1	45	37	34.3
15Dec 13	05:00:00	3600	41.9	62.4	32.9	46.3	42.9	38.6	35.9
15Dec 13	06:00:00	3600	46.7	66.9	34.1	50.7	47.6	40.3	37.4
15Dec 13	07:00:00	3600	51.2	73.6	36.6	54.9	49.2	42.1	39.3
15Dec 13	08:00:00	3600	47.6	70.1	35.4	51.6	46.8	41.5	38.2
15Dec 13	09:00:00	3600	51	70.2	35.4	57.4	50.9	41.8	38.7
15Dec 13	10:00:00	3600	51.2	70.1	37.5	58.4	53	42.8	39.5
15Dec 13	11:00:00	3600	53	70.5	39	59.8	56.1	44.7	41.2
15Dec 13	12:00:00	3600	55.1	77.3	40.8	61.7	58.9	48.8	44.3
15Dec 13	13:00:00	3600	56.5	93.5	42.3	61.8	59.2	49.7	45.5
15Dec 13	14:00:00	3600	56.2	79.3	41.9	62.7	60.1	49.9	45
15Dec 13	15:00:00	3600	53.2	68.4	39.6	60.8	57.6	44.9	41.5
15Dec 13	16:00:00	3600	52.5	69.2	39.6	59.3	56.2	44.5	41.5
15Dec 13	17:00:00	3600	53.4	68.6	39.6	60.9	57.9	44.6	41.5
15Dec 13	18:00:00	3600	52.3	68.5	39.4	59.3	55.2	43.9	41.2
15Dec 13	19:00:00	3600	51.6	70.6	39	58.7	54.5	44.7	41.7
15Dec 13	20:00:00	3600	52	71.9	39.3	58.3	54.5	46.1	42.2
15Dec 13	21:00:00	3600	50.4	73.3	37.9	57.1	51.8	43	40.2
15Dec 13	22:00:00	3600	48.2	67.8	38.2	53.9	49.4	42.3	40.2
15Dec 13	23:00:00	3600	51.4	85.9	38.3	55.2	51.5	44.2	41.3
16Dec 13	00:00:00	3600	45.8	65.4	35	51.2	46.9	40.1	37.3
16Dec 13	01:00:00	3600	41.9	63.2	32.2	43.3	39.8	36.3	34.4
16Dec 13	02:00:00	3600	44.3	63.4	33	49.4	47.8	40.7	35.4
16Dec 13	03:00:00	3600	49.6	68.2	37.9	53.8	52.3	47	44.1
16Dec 13	04:00:00	3600	49.7	72.9	39.3	53.4	50.4	44.3	42.2
16Dec 13	05:00:00	3600	50.3	77.1	38.7	56.4	52.2	43.9	41.4
16Dec 13	06:00:00	3600	54.1	85.1	40.5	59.7	55	45.7	42.9
16Dec 13	07:00:00	3600	59.3	75.1	44.8	65.8	64	54.9	47.1
16Dec 13	08:00:00	3600	63.4	86.5	49.8	67.8	66.7	61.5	55.4
16Dec 13	09:00:00	3600	63.3	89.6	50.6	68.1	66.6	60.6	55.3
16Dec 13	10:00:00	3600	61.2	73	45.7	66.6	65.1	58.6	52.7
16Dec 13	11:00:00	3600	62	76.2	52	66.4	65	60.4	56.5
16Dec 13	12:00:00	3600	61.5	79.4	48.5	65.7	64.5	60.1	56.3
16Dec 13	13:00:00	3600	61.7	88.3	43	65.3	63.8	58.7	51.4
16Dec 13	14:00:00	2542.8	61.1	75.2	52.2	65.5	64.2	59.8	55.8

16Dec 13	15:05:18	3281.3	61.9	77.7	48.8	67.3	64.9	59.3	54.9
16Dec 13	16:00:00	3600	58.3	75.5	45.8	63.4	61.8	56.1	51
16Dec 13	17:00:00	3600	55.3	69.4	39.9	62.2	60.1	49	43.1
16Dec 13	18:00:00	3600	53.7	69.9	40.2	61.3	57.8	44.3	41.8
16Dec 13	19:00:00	3600	52.5	70.2	39.9	59.9	56.4	44.1	42
16Dec 13	20:00:00	3600	50.3	69.9	39.5	57	52.8	43.6	41.5
16Dec 13	21:00:00	3600	50.4	69	38.6	57.8	53.2	43	40.7
16Dec 13	22:00:00	3600	48.5	69.4	37.6	53.5	48.9	41.3	39.3
16Dec 13	23:00:00	3600	46	67	35.7	50	46.5	40.1	38.1
17Dec 13	00:00:00	3600	43.8	66	34.8	45.6	41.9	38.4	36.7
17Dec 13	01:00:00	3600	40.2	62.7	32.8	41.4	39.5	36.8	35.1
17Dec 13	02:00:00	3600	42.2	67.8	31.3	41.8	39.9	36.8	34.8
17Dec 13	03:00:00	3600	47.6	65.9	31.4	55.7	50.2	36.8	34.6
17Dec 13	04:00:00	3600	44	64.7	31.3	49.8	40.7	35.6	33.4
17Dec 13	05:00:00	3600	47.5	72.7	33	53.9	49.5	38.9	35.7
17Dec 13	06:00:00	3600	50.2	75.5	37.1	55.8	52.3	42.1	40
17Dec 13	07:00:00	3600	58.9	72	40.1	64.4	62.8	56.4	50.1
17Dec 13	08:00:00	3600	61.8	78.5	48.4	66.1	65.1	60.6	54.4
17Dec 13	09:00:00	3600	62	80	48.9	66.8	65.5	59.7	54.7
17Dec 13	10:00:00	3600	58.2	75.2	40.5	63.6	62	55.6	46.1
17Dec 13	11:00:00	3600	59.4	84.8	46.9	63.8	62.4	57.9	53.4
17Dec 13	12:00:00	3600	61.4	79.1	42.4	66.7	64.3	58	53.4
17Dec 13	13:00:00	3600	59.2	82.6	41.1	64.7	63.2	56.8	45.1
17Dec 13	14:00:00	3600	61.2	78.5	51	65.3	64.1	60	55.9
17Dec 13	15:00:00	3600	60.9	73.5	48.7	65.1	63.9	59.7	55.1
17Dec 13	16:00:00	3600	62.6	79.8	41.8	67.4	66	61	54.7
17Dec 13	17:00:00	3600	54.3	70.1	38.5	61.6	59.1	45.6	40.8
17Dec 13	18:00:00	3600	53.8	71.5	38.8	60.9	58.2	44.8	41.2
17Dec 13	19:00:00	3600	54	69.4	38.5	61.4	58.5	45.4	41
17Dec 13	20:00:00	3600	50.8	67	37.8	57.6	53.5	44.3	40.4
17Dec 13	21:00:00	3600	49.2	66	37	56	51.4	42.1	39.3
17Dec 13	22:00:00	3600	46.3	65.6	36.1	51.2	47.2	40.1	37.7
17Dec 13	23:00:00	3600	45.6	70.7	35.6	49.9	46.5	39.8	37.7
18Dec 13	00:00:00	3600	49.9	72.7	37.7	55.3	52.7	44.9	40.4
18Dec 13	01:00:00	3600	46.9	67.8	35.2	51.8	49.1	41.3	38
18Dec 13	02:00:00	3600	46.7	65.8	35.7	52.3	50	42.7	38.6
18Dec 13	03:00:00	3600	47.3	69.1	35.2	52	49.4	42.1	38.1
18Dec 13	04:00:00	3600	44.6	64.2	34.1	50.1	47.8	40.2	37
18Dec 13	05:00:00	3600	43.1	65.6	34.4	47.2	44.7	39.5	36.9
18Dec 13	06:00:00	3600	51.2	72.4	36.6	58.3	55.1	42.4	39.6
18Dec 13	07:00:00	3600	61.6	80.5	40.6	67.5	66.1	57.6	43.9
18Dec 13	08:00:00	3600	64	77.9	52.9	68.3	67	62.7	58.3
18Dec 13	09:00:00	3600	63.7	82.2	45.2	68.2	66.8	62.1	55.3
18Dec 13	10:00:00	3600	60.3	76.4	42.8	65.7	63.9	57.4	47.2

18Dec 13	11:00:00	3600	61.5	78.8	48	66.7	64.8	59	52.2
18Dec 13	12:00:00	3600	60.3	77.3	43.8	65.1	63.7	58.6	52.7
18Dec 13	13:00:00	3600	59.3	79.6	40.4	64.5	63.1	56.2	46.5
18Dec 13	14:00:00	3600	61.5	79.1	47.3	66.3	64.7	59.3	53.7
18Dec 13	15:00:00	3600	64.1	86.2	48.3	68.4	66.4	61.7	55.8
18Dec 13	16:00:00	3600	66.9	95.8	51.4	72.2	68.9	61.8	56.2
18Dec 13	17:00:00	3600	58.8	85.2	44.8	65.2	63.3	52.3	47.1
18Dec 13	18:00:00	3600	60.7	83.7	45.2	66.1	64	54.4	49.2
18Dec 13	19:00:00	3600	57.8	75.6	44.4	64.4	62	52	47.8
18Dec 13	20:00:00	3600	55.7	79.2	40.2	61.9	59.4	48.1	44
18Dec 13	21:00:00	3600	56.6	80.6	41	62.4	59.4	48.9	43.8
18Dec 13	22:00:00	3600	55.9	89	39.9	59.3	54.8	44.7	41.9
18Dec 13	23:00:00	3600	54.5	88.2	39.4	58.6	55	45.6	41.9
19Dec 13	00:00:00	3600	50.2	80.1	38.8	55.3	50.7	42.4	40.4
19Dec 13	01:00:00	3600	52.7	77.1	37.8	57.9	53.8	43.2	39.8
19Dec 13	02:00:00	3600	47.1	71.6	35.3	51.9	48.6	40.9	38.2
19Dec 13	03:00:00	3600	44.9	69.1	35.3	45.7	42.7	39	37.1
19Dec 13	04:00:00	3600	50.3	74.2	35.9	55.2	51.7	41.6	38.2
19Dec 13	05:00:00	3600	51.8	74.9	35.8	59	56.6	40.5	37.8
19Dec 13	06:00:00	3600	54.4	85.4	38.5	60	56.9	47.4	42.2
19Dec 13	07:00:00	3600	62.6	87.9	42.3	67.3	65.4	57.9	46.7
19Dec 13	08:00:00	3600	62.6	76.9	51.2	66.8	65.7	61.2	56.7
19Dec 13	09:00:00	3600	62.3	86.3	46.3	67	65.8	60.1	54.7
19Dec 13	10:00:00	3600	61	87.4	44	66.6	64.8	57.7	48
19Dec 13	11:00:00	3600	63	79.7	50.8	67.8	66.6	60.9	55.9
19Dec 13	12:00:00	3600	61.6	76	45.6	66.2	64.7	59.8	54.9
19Dec 13	13:00:00	3600	60.7	82.2	43.4	65.9	64.4	57.6	49.1
19Dec 13	14:00:00	3600	62.3	77.2	49.8	67	65.6	60.5	55.4
19Dec 13	15:00:00	3600	65.6	85.4	48.8	69.9	68.1	63.2	57.9
19Dec 13	16:00:00	3600	65.4	87.2	46	70.2	68.2	62.6	56.9
19Dec 13	17:00:00	3600	57.4	73.4	42.3	64	62	50.4	45.1
19Dec 13	18:00:00	3600	57.2	72.5	42.4	64.3	62.3	49.9	44.7
19Dec 13	19:00:00	3600	57.9	73.5	41.9	65.1	62.8	49.8	44.5
19Dec 13	20:00:00	3600	54.7	76.1	42.4	61.4	58.6	48.3	44.6
19Dec 13	21:00:00	3600	53.3	79.4	41.8	60.3	56.7	46.1	43.5
19Dec 13	22:00:00	3600	52.3	73.6	40.6	58.8	55.3	45.5	42.7
19Dec 13	23:00:00	3600	52.8	80.5	40	58.7	55.4	45.2	42.4
20Dec 13	00:00:00	3600	50.5	73.9	39.5	55.9	51.9	43.5	41.5
20Dec 13	01:00:00	3600	48.6	75.4	38.1	53.3	49.5	42.6	40.7
20Dec 13	02:00:00	3600	46.6	76.9	38.2	50.5	47.2	41.7	40
20Dec 13	03:00:00	3600	50	68.2	37.7	57.5	53.8	41.9	39.7
20Dec 13	04:00:00	3600	45	66.4	37.1	49.2	45.1	40.6	39
20Dec 13	05:00:00	3600	47.9	75.4	37.2	53.6	47.6	41.3	39.3
20Dec 13	06:00:00	3600	49.8	67.4	40.2	55.3	52.3	44.4	42.1

20Dec 13	07:00:00	3600	57.7	75.7	41.8	64	62.1	53	44.4
20Dec 13	08:00:00	3600	62	79.1	48.7	66.5	65.3	60.2	54
20Dec 13	09:00:00	3600	61.3	77.9	43.8	65.9	64.6	59.7	52.7
20Dec 13	10:00:00	3600	61.2	78.3	43.4	66.4	65	59.3	47.5
20Dec 13	11:00:00	3600	63.6	77.8	49.2	68.1	66.8	61.9	56.9
20Dec 13	12:00:00	3600	60.9	76.8	45.6	66	64.6	58.7	51.3
20Dec 13	13:00:00	3600	58.1	79	43.1	64.3	62.5	52.5	46.4
20Dec 13	14:00:00	3600	58.3	77.5	43	64.4	62.8	53.2	46.7
20Dec 13	15:00:00	3600	57.1	75.4	43.2	63.3	61.6	52.1	46.4
20Dec 13	16:00:00	3600	57.3	75.4	44	63.3	61.3	53	47.6
20Dec 13	17:00:00	3600	58.9	86.4	44.6	64.2	62.3	53.9	48.9
20Dec 13	18:00:00	3600	61.6	86.9	47.6	66.6	64.3	56.4	51.4
20Dec 13	19:00:00	3600	61.2	87.6	46.8	66.3	64.2	56.3	51.1
20Dec 13	20:00:00	3600	57.5	85.3	44.2	63.4	60.6	51.4	47.6
20Dec 13	21:00:00	3600	63	90	43.7	67.2	63.6	53.4	47.4
20Dec 13	22:00:00	3600	55.3	79.4	42.2	61.8	58.7	48.2	44.5
20Dec 13	23:00:00	3600	54	77.2	41.2	60.3	56.9	46.5	43.6
21Dec 13	00:00:00	3600	55.6	81.6	41.1	61.5	58.4	47.9	43.6
21Dec 13	01:00:00	3600	52.1	78.5	40.5	57.3	53.3	45	42.4
21Dec 13	02:00:00	3600	48.7	70.3	40.1	53.7	50.3	43.9	42.1
21Dec 13	03:00:00	3600	49.6	69.3	39.1	55	52	44.4	41.9
21Dec 13	04:00:00	3600	49.8	69.8	38.6	54.8	51.8	44.2	41.1
21Dec 13	05:00:00	3600	49.6	73.6	37.3	54.4	51.8	43.7	40.1
21Dec 13	06:00:00	3600	52.6	76.6	38.4	57.8	55	46.8	41.6
21Dec 13	07:00:00	3600	54.7	83.1	41.5	60.1	57.2	48.8	44.6
21Dec 13	08:00:00	3600	54.5	78.5	41.3	61.4	57.8	47.1	43.9
21Dec 13	09:00:00	3600	55.8	77.7	41.7	63.1	58.7	46.9	43.5
21Dec 13	10:00:00	3600	56	73.8	41.7	62.2	59.9	50.5	45.2
21Dec 13	11:00:00	3600	55.2	80.9	41.2	62	59.4	48	43.4
21Dec 13	12:00:00	3600	55.6	75.5	40.2	62	59.9	49.4	43.7
21Dec 13	13:00:00	3600	56.6	72.8	39.8	63.5	61.4	49.5	42.9
21Dec 13	14:00:00	3600	59.4	72.1	43.6	65.8	64.1	54.3	47.3
21Dec 13	15:00:00	3600	57.8	74.3	43.3	65	62.7	51.4	45.2
21Dec 13	16:00:00	3600	55.1	75.4	42	62.3	58.3	47.6	44.3
21Dec 13	17:00:00	3600	54.9	70	42	62.4	58.7	47	44.4
21Dec 13	18:00:00	3600	55.8	76.6	42.9	62.9	59.6	48.2	44.9
21Dec 13	19:00:00	3600	54.4	72.9	41	61.5	57.3	45.7	43.3
21Dec 13	20:00:00	3600	52.3	70.2	40	59.8	54.7	43.5	41.5
21Dec 13	21:00:00	3600	50.6	68.7	40.2	57.1	51.3	43.6	41.9
21Dec 13	22:00:00	3600	50.9	70.8	39.5	57.1	52.6	44.5	41.7
21Dec 13	23:00:00	3600	49.6	69.3	39.3	55	50.5	42.9	41
22Dec 13	00:00:00	3600	49.5	69.5	38.3	54.5	49.9	42.9	40.7
22Dec 13	01:00:00	3600	54.3	84.1	37.1	55	51.3	43.9	40
22Dec 13	02:00:00	3600	53.6	85.5	36.9	54.5	50.2	42.7	40.2

22Dec 13	03:00:00	3600	56.3	86.2	39	52.8	48.6	42.7	40.9
22Dec 13	04:00:00	3600	49.1	73.6	38.8	52.9	49.5	43.5	41.4
22Dec 13	05:00:00	3600	48.7	72.3	38.1	54	50.3	43.2	40.4
22Dec 13	06:00:00	3600	54.2	78.7	38.1	60	56.5	46.3	41.5
22Dec 13	07:00:00	3600	49.5	68.7	37.8	55	51.4	43.3	40.4
22Dec 13	08:00:00	3600	51.2	77.7	38.7	56.8	52.6	43.4	40.7
22Dec 13	09:00:00	3600	56	81.2	39.4	62.3	58	46	42.1
22Dec 13	10:00:00	3600	54.7	77.4	38.7	61.4	57.2	44.3	41.5
22Dec 13	11:00:00	3600	56.4	81.8	39.8	63	60.3	46.7	42.3
22Dec 13	12:00:00	3600	54.6	77.8	41.6	61.8	58	46.3	43.4
22Dec 13	13:00:00	3600	54.9	71.6	41.9	62.4	59	47.6	44.4
22Dec 13	14:00:00	3600	55.6	73.6	42.7	62.8	59.8	47.9	44.5
22Dec 13	15:00:00	3600	58.1	82.9	42.4	64.5	61.3	48.4	44.4
22Dec 13	16:00:00	3600	53.6	70.9	41.5	61.1	56.8	45.8	43.6
22Dec 13	17:00:00	3600	56.2	87.3	41.2	62.6	59.7	47	43.4
22Dec 13	18:00:00	3600	54	72.9	40.6	61.4	57.9	44.9	42.6
22Dec 13	19:00:00	3600	53.2	69.4	40.1	60.6	55.6	43.7	41.9
22Dec 13	20:00:00	3600	51.5	70.3	40.1	58.5	53.1	43.8	42.2
22Dec 13	21:00:00	3600	51.6	69.9	38.9	58.6	52.9	43	41.4
22Dec 13	22:00:00	3600	49.1	71.8	39	52.4	47.1	41.9	40.5
22Dec 13	23:00:00	3600	47.3	66.1	38.1	51.1	46.5	41.1	39.7
23Dec 13	00:00:00	3600	46.9	68.3	36.9	48.6	44.1	40.3	38.9
23Dec 13	01:00:00	3600	42	65.6	35.3	41.9	40.3	38.3	37
23Dec 13	02:00:00	3600	41.5	64	32.5	40.8	39.3	36.5	34.4
23Dec 13	03:00:00	3600	42.3	64.1	33	41.4	39.6	36.6	34.9
23Dec 13	04:00:00	3600	42.3	66	33.4	40.9	39.9	37.5	35.7
23Dec 13	05:00:00	3600	50	73.3	35.8	53.6	46.6	41.5	38.4
23Dec 13	06:00:00	3600	51.1	70.8	39.2	55.8	51.1	44.6	42
23Dec 13	07:00:00	3600	54.9	71	41.2	62.2	59	47	43.4
23Dec 13	08:00:00	3600	56.3	72.6	42	63.3	60.9	49.6	45.5
23Dec 13	09:00:00	3600	57.3	77.7	42.2	63.7	61.6	50.9	45.5
23Dec 13	10:00:00	3600	58	77.9	45	63.7	61.9	54.1	48.2
23Dec 13	11:00:00	3600	59.2	79.7	44.1	64.8	62.9	54.5	48.2
23Dec 13	12:00:00	3600	58.1	77.4	43.8	64.1	62.1	54.2	48.3
23Dec 13	13:00:00	3600	60.7	85.4	45.1	65	62.8	54.6	49.2
23Dec 13	14:00:00	3600	58.6	78.2	43.9	64.4	62.8	53.8	47.3
23Dec 13	15:00:00	3600	56.8	72.7	42.9	63.4	61.3	50.5	45.5
23Dec 13	16:00:00	3600	56.3	76.7	42.6	62.8	60.7	50	45.3
23Dec 13	17:00:00	3600	56.3	76.1	42.2	62.7	60.2	50.7	45.2
23Dec 13	18:00:00	3600	54.1	77	41.9	60.4	57.8	48.4	44.4
23Dec 13	19:00:00	3600	55.3	81	41.6	61.6	59	49.9	44.9
23Dec 13	20:00:00	3600	53.8	73.1	40.9	60.7	57.5	47.7	43.3
23Dec 13	21:00:00	3600	53.3	76.2	40	60	56.7	47.1	43.3
23Dec 13	22:00:00	3600	52.5	76.2	40.2	58.1	54.6	45.9	43

23Dec 13	23:00:00	3600	57.3	82.3	40.5	62.7	59.7	49.6	44.3
24Dec 13	00:00:00	3600	60.3	85.4	42	66.2	62.7	51.3	45.7
24Dec 13	01:00:00	3600	59	90.8	39.2	63.7	59.9	48.8	43.3
24Dec 13	02:00:00	3600	56.1	85.7	38.7	57.7	54.6	46.3	42.2
24Dec 13	03:00:00	3600	56	86.6	39.1	58	54.5	46.8	42.9
24Dec 13	04:00:00	3600	48.9	75.1	36.2	52.7	49.6	42.3	39.4
24Dec 13	05:00:00	3600	52.5	80.9	38.3	57.8	54.7	46.2	41.6
24Dec 13	06:00:00	3600	54	75.7	39.6	59.8	57.2	49.1	44.2
24Dec 13	07:00:00	3600	56.6	84.4	42.9	62.7	60.2	51.4	46.2
24Dec 13	08:00:00	3600	57.1	80.9	42.1	63.5	61	51.5	46.1
24Dec 13	09:00:00	3600	60.1	93.7	44.3	65.1	63	54.2	48.3
24Dec 13	10:00:00	3600	60.2	83.1	44.5	65.5	63.4	55.4	49.8
24Dec 13	11:00:00	3600	60.7	86.5	45.5	66.1	63.9	55.7	50
24Dec 13	12:00:00	3600	60.5	83.2	46.2	65.9	63.8	55.8	50.5
24Dec 13	13:00:00	3600	62.6	93.7	46.2	66.7	64.6	56.6	51.1
24Dec 13	14:00:00	3600	58	80.1	44.7	64.1	62	52.1	47.5
24Dec 13	15:00:00	3600	56.3	74.2	42	63.6	61.1	48.6	44.4
24Dec 13	16:00:00	3600	53.4	74.2	41.9	59.8	56.4	47.6	44.5
24Dec 13	17:00:00	3600	54	72.2	42.3	60.8	57.3	47.5	44.5
24Dec 13	18:00:00	3600	53.3	78.1	41.8	59.8	56.2	46.9	44.1
24Dec 13	19:00:00	3600	53.8	78.8	41.2	60.1	56.4	46.5	43.4
24Dec 13	20:00:00	3600	53.9	83.4	40.7	57.8	54.1	45.3	42.6
24Dec 13	21:00:00	3600	49.7	70.6	38.4	54.1	49.1	42.3	40.5
24Dec 13	22:00:00	3600	48	69	37.7	52.2	47.1	41.2	39.3
24Dec 13	23:00:00	3600	41.6	65.5	34.5	41.6	40	38	36.5
25Dec 13	00:00:00	3600	44.4	67.3	33.8	45	41.2	37.4	35.6
25Dec 13	01:00:00	3600	39.8	65.9	31.1	38.7	37.7	35.6	34
25Dec 13	02:00:00	3600	39.4	65.2	29.6	38.9	37.7	34.8	32.6
25Dec 13	03:00:00	3600	42.7	65.3	28.5	42.7	38.6	34.4	31.9
25Dec 13	04:00:00	3600	56.8	86.9	27.6	53	42.5	33.8	31
25Dec 13	05:00:00	3600	46.7	65.8	29	54.8	51	34.5	32.1
25Dec 13	06:00:00	3600	47.2	66.1	30.4	55.2	50.2	36.8	33.5
25Dec 13	07:00:00	3600	46.6	66.7	32.9	53.8	48.8	38.5	36.2
25Dec 13	08:00:00	3600	46.3	69.2	34.8	49.3	46	40	37.3
25Dec 13	09:00:00	3600	51.3	77.9	34.2	56.3	50.5	39.8	37.1
25Dec 13	10:00:00	3600	50.9	71.6	36.6	57.6	53.9	42	38.9
25Dec 13	11:00:00	3600	50.5	75.1	34.5	57.1	52.3	40.7	37.2
25Dec 13	12:00:00	3600	52.7	79.3	29.1	59	55.2	41.1	33.5
25Dec 13	13:00:00	3600	52.1	72	29	59.3	54.3	38.9	33.2
25Dec 13	14:00:00	3600	53	69.6	34.8	60.3	56.5	41.7	37.8
25Dec 13	15:00:00	3600	51.3	79.7	35.6	56.8	51.4	40.3	38.4
25Dec 13	16:00:00	3600	49.1	70	36.5	52.5	46.8	41.1	39.3
25Dec 13	17:00:00	3600	46.9	70.9	36.6	46.7	43	40	38.4
25Dec 13	18:00:00	3600	50.3	78.1	37.7	50.6	45.9	41.3	39.8

25Dec 13	19:00:00	3600	56.2	90.3	37	53.2	46.4	40.5	39.1
25Dec 13	20:00:00	3600	48.1	69.8	36.7	52.4	47.4	40.6	38.8
25Dec 13	21:00:00	3600	48.6	69.2	36.1	54.1	48	40.5	38.4
25Dec 13	22:00:00	3600	44.9	66.7	35.4	45.2	42.5	39.5	38
25Dec 13	23:00:00	3600	45	67.9	34.4	47.2	42.4	38.7	36.9
26Dec 13	00:00:00	3600	43.8	68.9	31.7	44.4	40	36.7	34.5
26Dec 13	01:00:00	3600	40.3	64.2	29.4	40.9	37.8	34	32.2
26Dec 13	02:00:00	3600	41.2	64.2	28.5	40.6	38.6	33.7	31.1
26Dec 13	03:00:00	3600	38.7	63.6	28.9	40.8	39	34.4	31.6
26Dec 13	04:00:00	3600	46.3	66.4	29.7	54.1	47.3	34.4	32.1
26Dec 13	05:00:00	3600	45.3	65.7	30.4	51.3	44.5	35.8	33.2
26Dec 13	06:00:00	3600	41.5	59.6	32.1	45.9	43.5	38.4	35
26Dec 13	07:00:00	3600	64.8	102	35.4	49.6	46.3	41.2	38.9
26Dec 13	08:00:00	3600	48	69.5	35.9	50.9	47.2	41.3	38.9
26Dec 13	09:00:00	3600	50.3	70.9	38.1	55.3	50.5	42.5	40.4
26Dec 13	10:00:00	3600	51.1	71.8	38.5	56.4	51.2	42.9	40.8
26Dec 13	11:00:00	3600	51.4	74	37.5	57.6	53.4	42.6	39.7
26Dec 13	12:00:00	3600	49.9	70.5	33.8	56.7	50	39.5	36.6
26Dec 13	13:00:00	3600	52.4	83.2	31.2	59.7	53.1	37.4	34
26Dec 13	14:00:00	3600	52.3	71.3	33.2	60.1	55.6	39.4	36
26Dec 13	15:00:00	3600	51.6	73.6	36.4	57.6	52.6	40.8	38.3
26Dec 13	16:00:00	3600	50.8	72.6	36.9	57.1	50.7	41.2	38.8
26Dec 13	17:00:00	3600	50.9	70.1	37.5	56.6	52.4	43.2	39.5
26Dec 13	18:00:00	3600	51	72	38.7	56	51.4	44.5	41.7
26Dec 13	19:00:00	3600	54.4	77.1	41.6	60	56.9	48.6	43.6
26Dec 13	20:00:00	3600	57.3	89.6	43.6	61.4	58.8	52.6	47.8
26Dec 13	21:00:00	3600	54	69.8	42.6	59.8	56.9	50	46.6
26Dec 13	22:00:00	3600	57	82.2	43.3	62.8	60.3	52.8	47.6
26Dec 13	23:00:00	3600	60.1	85.2	41	65.4	62.6	54.2	47
27Dec 13	00:00:00	3600	55.5	76.8	39.3	61.3	58.8	50.7	45.1
27Dec 13	01:00:00	3600	59.9	85	39.7	65.5	62.5	53.3	45.6
27Dec 13	02:00:00	3600	61.9	86.9	46	67.3	64.6	56.6	51.1
27Dec 13	03:00:00	3600	64.1	97.8	46.7	69.2	66.3	57.7	51.8
27Dec 13	04:00:00	3600	64.2	91.8	46.3	68.7	65.1	56.4	51
27Dec 13	05:00:00	3600	62.1	89.9	44.8	66.5	63.7	55.8	50.2
27Dec 13	06:00:00	3600	64.8	91.6	46.8	68.6	65.1	56.6	50.9
27Dec 13	07:00:00	3600	65.1	91.6	43.6	69.2	65.2	54.3	48.5
27Dec 13	08:00:00	3600	64.3	88.8	44.7	69.2	65.9	55.9	49.8
27Dec 13	09:00:00	3600	64	87.9	46.2	69.7	66.2	55.7	49.9
27Dec 13	10:00:00	3600	66	93.5	45.9	71	67.4	56.6	50.2
27Dec 13	11:00:00	3600	64.9	89.1	47.8	70.1	66.8	56.8	51.5
27Dec 13	12:00:00	3600	65.3	93.2	46.9	70.1	66.7	57	50.1
27Dec 13	13:00:00	3600	63	95.8	44.5	67	63.5	53.8	48.1
27Dec 13	14:00:00	3600	61.2	85.8	44.5	66.7	64	54.1	48.4

27Dec 13	15:00:00	3600	61.4	85.4	44.1	66.5	63.6	53.3	47.5
27Dec 13	16:00:00	3600	57.2	78.9	42.4	63.7	61.1	50.1	45.3
27Dec 13	17:00:00	3600	62.2	84	43	68.3	65.2	54.6	47.5
27Dec 13	18:00:00	3600	59.4	86.3	41.9	64.2	61	50.3	44.7
27Dec 13	19:00:00	3600	54.3	75.8	40.2	61.2	57.6	45.8	42.3
27Dec 13	20:00:00	3600	54.1	77.1	39.1	60.4	57.1	46.4	42.6
27Dec 13	21:00:00	3600	50.2	68.7	37.3	56.2	52.3	42.4	39.9
27Dec 13	22:00:00	3600	49.7	69.1	36.9	55.3	50	41.6	38.9
27Dec 13	23:00:00	3600	49.1	70.9	37.6	54.8	50.5	42.2	39.9
28Dec 13	00:00:00	3600	47.6	70	36.8	52.8	48.7	40.9	38.9
28Dec 13	01:00:00	3600	49.1	69.7	35.2	54.3	50.8	41.4	38.4
28Dec 13	02:00:00	3600	43.3	69.3	34.9	45.1	42	38.2	36.6
28Dec 13	03:00:00	3600	40.3	59.9	34.9	43.8	41.7	38.5	36.9
28Dec 13	04:00:00	3600	42.8	64.9	35.2	46.6	43.7	38.9	37.1
28Dec 13	05:00:00	3600	45	69.8	35.3	48.8	45.4	39.5	37.4
28Dec 13	06:00:00	3600	45.5	67.4	36.4	49	46.9	42.1	39.3
28Dec 13	07:00:00	3600	48.9	72.4	37.3	55	50.7	42.6	40.4
28Dec 13	08:00:00	3600	50	66.6	37.9	56.4	52.7	42.9	40.4
28Dec 13	09:00:00	3600	52.3	73.1	38.4	58.1	55.7	43.5	40.9
28Dec 13	10:00:00	3600	51.1	70.1	40	57.2	54.1	45.8	42.9
28Dec 13	11:00:00	3600	55.3	73.4	42.4	61.1	58.9	50.2	44.9
28Dec 13	12:00:00	3600	54.5	76.1	42.4	61.3	58.8	48.7	45.3
28Dec 13	13:00:00	3600	54.3	73.2	42.8	60.6	57.9	48.5	45.2
28Dec 13	14:00:00	3600	54.3	74.5	43.5	61.2	58	47.6	45.1
28Dec 13	15:00:00	3600	53.7	72	43.6	60.1	56.8	47.4	45.2
28Dec 13	16:00:00	3600	52.6	70.2	41.3	59.5	54.7	45.6	43.4
28Dec 13	17:00:00	3600	52.1	70.1	41.5	58.6	54.7	45.8	43.5
28Dec 13	18:00:00	3600	50.9	74.6	40.7	57.3	52.7	44.5	42.5
28Dec 13	19:00:00	3600	52.8	71.5	40.6	60.1	55.9	44.9	42.5
28Dec 13	20:00:00	3600	51.5	68.4	40.3	57.8	52.8	44.6	42.4
28Dec 13	21:00:00	3600	50	67.6	39.5	55.4	51.4	43.5	41.5
28Dec 13	22:00:00	3600	49.7	68.9	37.7	55.3	50.5	42.7	40.8
28Dec 13	23:00:00	3600	48.1	70.9	37.4	52.4	48.8	41.8	39.9
29Dec 13	00:00:00	3600	47.2	66.3	37.8	52.3	48.6	41.7	39.8
29Dec 13	01:00:00	3600	49.3	68.5	37.5	55.7	51.2	42	39.7
29Dec 13	02:00:00	3600	47.2	69	36.7	52.4	48.8	41.8	39.5
29Dec 13	03:00:00	3600	47.9	70	36	51.5	47.7	41.4	39.2
29Dec 13	04:00:00	3600	48.4	68.2	35.9	54.2	50.1	41.6	39.1
29Dec 13	05:00:00	3600	44	68.3	34.5	46.6	44	38.9	36.8
29Dec 13	06:00:00	3600	48.4	69.1	34	55.4	49.4	39.2	36.6
29Dec 13	07:00:00	3600	44.5	64.4	36.5	48.3	44.9	40.4	38.4
29Dec 13	08:00:00	3600	49.1	72.5	34.6	55	51.3	39.9	37.7
29Dec 13	09:00:00	3600	49.5	72.6	35.9	56.1	52.4	39.9	38.1
29Dec 13	10:00:00	3600	51.9	77.1	35.4	58.7	54.1	39.9	37.5



29Dec 13	11:00:00	3600	51.4	70.5	35.1	58.6	53.2	40.7	37.4
29Dec 13	12:00:00	3600	50.5	70.1	35.9	57.7	51.6	40.8	38.3
29Dec 13	13:00:00	3600	53.3	70.7	36.8	61	56.8	42.8	39.5
29Dec 13	14:00:00	3600	52	71.7	37.7	58.7	53.7	42.7	39.6
29Dec 13	15:00:00	3600	52.9	74.8	38	60.2	55.8	43.3	40.3
29Dec 13	16:00:00	3600	52.6	73.8	39.6	59.8	56	45.3	42
29Dec 13	17:00:00	3600	49.9	67.8	38.2	57.2	51.3	42.1	40
29Dec 13	18:00:00	3600	50.8	69.1	37.9	57.2	51.8	43	40.4
29Dec 13	19:00:00	3600	52.2	71.6	38.9	58.7	54.7	44.9	41.6
29Dec 13	20:00:00	3600	50.4	67.6	38.6	56.3	53	44.5	40.7
29Dec 13	21:00:00	3600	50.1	72.7	39.1	56	52.3	44.6	41.6
29Dec 13	22:00:00	3600	49.9	71.4	38.3	55.7	52.6	44	40.7
29Dec 13	23:00:00	3600	49.7	69.7	38.7	55.2	51.9	44.3	41.3
30Dec 13	00:00:00	3600	49.4	73.9	38.4	54.3	51.3	43.9	40.7
30Dec 13	01:00:00	3600	46.7	70.1	35.1	51.3	48.1	40.7	37.8
30Dec 13	02:00:00	3600	45.3	68.1	35	48.5	45.1	39.6	37.3
30Dec 13	03:00:00	3600	48.3	79.1	34.9	47.3	44.4	39.5	37.3
30Dec 13	04:00:00	3600	48.7	77.1	36.9	51	49.6	40.9	38.8
30Dec 13	05:00:00	3600	51.7	76.8	43.4	55	52.1	47.9	45.5
30Dec 13	06:00:00	3600	53.2	70.3	43.3	58.3	55.5	49.3	46.4
30Dec 13	07:00:00	3600	54.5	74.5	43.3	60.6	57.1	48.9	46.1
30Dec 13	08:00:00	3600	55.5	74.4	43.3	62.2	59	49.5	45.7
30Dec 13	09:00:00	3600	55	79.6	42.9	61.8	57.9	48.2	45.2
30Dec 13	10:00:00	3600	56.1	72.3	42.4	62.9	60.3	49.8	45.3
30Dec 13	11:00:00	3600	56	70	43.3	62.6	60.3	50.8	45.7
30Dec 13	12:00:00	3600	55.8	72.1	42.1	62.2	60	50.4	45.3
30Dec 13	13:00:00	3600	54.6	72.9	40.3	61.2	58.9	48.2	43.1
30Dec 13	14:00:00	3600	54.5	72.6	39.6	61.5	59.1	46.7	42
30Dec 13	15:00:00	3600	53.4	71.1	38.9	60.7	57.9	45	41.4
30Dec 13	16:00:00	3600	51.2	67.5	39.4	59.1	53.7	42.7	40.7
30Dec 13	17:00:00	3600	53.2	77.6	38.1	60.1	56.7	42	39.8
30Dec 13	18:00:00	3600	51	71.3	36.8	57.8	52.3	40.6	38.4
30Dec 13	19:00:00	3600	51	69.2	36.8	58.2	53.1	40.4	38.4
30Dec 13	20:00:00	3600	48.5	68.9	36.8	52.5	47.7	41.7	39.2
30Dec 13	21:00:00	3600	47.6	68.6	36.7	50.8	45.6	40.1	38.4
30Dec 13	22:00:00	3600	47.8	66.6	35.6	53	48.5	40.9	38.7
30Dec 13	23:00:00	3600	46.6	67.8	36.4	51.1	46.4	40	38.3
31Dec 13	00:00:00	3600	44.8	64.3	35.5	48.5	44.3	39.4	37.5
31Dec 13	01:00:00	3600	44.7	68.4	33.2	46.3	42.6	36.9	35.2
31Dec 13	02:00:00	3600	43.8	76.8	32	45.5	42.9	37.3	34.4
31Dec 13	03:00:00	3600	44.3	71.1	32.3	45.6	42.2	37.2	34.5
31Dec 13	04:00:00	3600	44.6	73	32.8	49.3	46	40.2	36.3
31Dec 13	05:00:00	3600	52.8	78.4	39.1	58.9	54.8	46	42.5
31Dec 13	06:00:00	3600	47.3	67.8	36.9	53	47.7	41.3	39.3

31Dec 13	07:00:00	3600	51.2	70.8	37.3	58.7	54.2	42.7	40.2
31Dec 13	08:00:00	3600	56.6	80.8	39.2	62.7	58.4	45.5	41.5
31Dec 13	09:00:00	3600	54	77.7	39.5	61.6	57.9	45.1	41.8
31Dec 13	10:00:00	3600	52.8	70.2	39.3	60	57	44.6	41.5
31Dec 13	11:00:00	3600	53.4	67.9	37.3	60.6	58.3	44.9	40.3
31Dec 13	12:00:00	3600	53.3	71.7	38.8	60.3	57.4	45.6	41.3
31Dec 13	13:00:00	3600	56.8	77.9	42.2	62.7	59.9	51.9	46.1
31Dec 13	14:00:00	3600	55.7	80.6	41.2	61.3	58.6	46.2	43.1
31Dec 13	15:00:00	3600	54.6	77.5	40.9	62.1	58.6	45.5	42.8
31Dec 13	16:00:00	3600	55	76	38.2	62.2	58.6	44.1	40.5
31Dec 13	17:00:00	3600	51.8	72	36.7	59.3	54.1	41.1	38.8
31Dec 13	18:00:00	3600	50.9	68.5	37.3	58.2	52.4	40.6	38.6
31Dec 13	19:00:00	3600	52.2	69.2	37.8	59.7	55.3	41.8	39.4
31Dec 13	20:00:00	3600	51.1	71.8	37.3	58.2	50.9	40.5	39
31Dec 13	21:00:00	3600	51	68.1	35.4	58.4	51.7	39.8	37.9
31Dec 13	22:00:00	3600	47.6	69.7	35.6	51.3	44.3	38.7	37.2
31Dec 13	23:00:00	3600	49.1	71.1	34.7	54.3	49.9	40.6	37.5
01Jan 14	00:00:00	3600	50.1	84.3	35.3	53.9	48.7	39.3	37.3
01Jan 14	01:00:00	3600	46.1	66.3	35.1	49	44.3	38.1	36.5
01Jan 14	02:00:00	3600	54	84.7	34.7	50	44.2	37.9	36.3
01Jan 14	03:00:00	3600	41.9	67.1	34.8	42.3	40.7	37.9	36.4
01Jan 14	04:00:00	3600	45.2	65.3	34.2	49.2	43.8	38.2	35.8
01Jan 14	05:00:00	3600	45.1	67.7	33.2	48.5	43.4	38.9	36.9
01Jan 14	06:00:00	3600	45.7	67	33.7	48.9	43.4	38.7	36.2
01Jan 14	07:00:00	3600	45.7	65.6	33.8	49.3	44.6	39.2	36.7
01Jan 14	08:00:00	3600	51	75.6	35.9	56.4	51.3	42.3	39.2
01Jan 14	09:00:00	3600	52.6	79.4	40.7	57.6	54.8	48.3	43.6
01Jan 14	10:00:00	3600	58.3	81	44.6	64.1	61.2	51.7	47.6
01Jan 14	11:00:00	3600	58.2	81.9	42.7	64	61.3	52	46.7
01Jan 14	12:00:00	3600	51.5	75.8	37.8	58.1	54.1	43.1	39.6
01Jan 14	13:00:00	3600	53.8	77.7	37.7	60.1	54.9	42.1	39.8
01Jan 14	14:00:00	3600	51.6	71	38	58.2	52.9	44.2	41
01Jan 14	15:00:00	3600	52.1	71.5	39.7	58.6	54.1	44.5	41.8
01Jan 14	16:00:00	3600	57.9	83.7	41.3	62.8	59.9	48.7	44.4
01Jan 14	17:00:00	3600	57.4	83.6	42.7	63.5	60.8	50.3	45.5
01Jan 14	18:00:00	3600	52.6	73.3	40.4	59.1	55.2	45.5	42.7
01Jan 14	19:00:00	3600	55.6	85.5	39.6	58.5	54.1	44.7	42.1
01Jan 14	20:00:00	3600	52.3	71.3	38.9	58.8	54.3	44.2	41.3
01Jan 14	21:00:00	3600	47.6	66.4	36.9	52.3	48.3	41.6	39.4
01Jan 14	22:00:00	3600	49.4	70.1	37	53.2	48.3	41	39.1
01Jan 14	23:00:00	3600	47.3	69.3	36.7	51.4	47.9	41.1	39.1
02Jan 14	00:00:00	3600	46.3	68.1	35.6	50.5	47.1	40.2	38.1
02Jan 14	01:00:00	3600	44.4	65.5	34.4	50.1	47.1	39.4	37
02Jan 14	02:00:00	3600	47.3	69.4	33.4	53.1	49.9	40.1	36.4

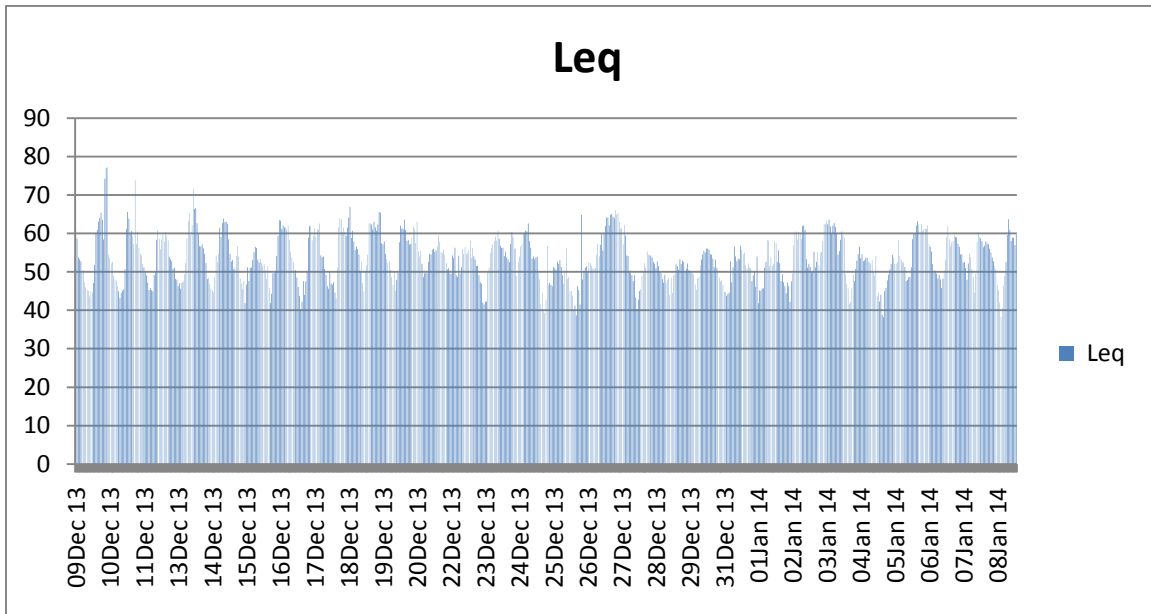
02Jan 14	03:00:00	3600	46.3	76.2	31.9	49.7	45.9	37.6	34.5
02Jan 14	04:00:00	3600	42.2	67.3	32.1	41.6	39.8	36.4	34.3
02Jan 14	05:00:00	3600	47.5	71.9	34.5	53.3	49.8	41	37
02Jan 14	06:00:00	3600	49.6	73.5	38.7	54.5	51.2	43.8	41.2
02Jan 14	07:00:00	3600	56.9	76.3	41.6	62.7	60.8	53.8	44.1
02Jan 14	08:00:00	3600	60.5	80.7	45.8	65.6	63.8	57.2	51.6
02Jan 14	09:00:00	3600	60.4	80.9	46	65.4	63.7	58.1	51.3
02Jan 14	10:00:00	3600	58.4	76.5	43.5	63.7	61.9	55.2	46.4
02Jan 14	11:00:00	3600	60.3	77.4	48.5	65.1	63.5	58.5	53.6
02Jan 14	12:00:00	3600	60.2	75.3	42.1	65	63.5	58.3	52.4
02Jan 14	13:00:00	3600	58.7	84.4	41.1	64.1	62.5	55.4	44.4
02Jan 14	14:00:00	3600	61.9	81.7	50	66.6	65	60	55.8
02Jan 14	15:00:00	3600	62.1	78	49	66.6	65	60.4	56
02Jan 14	16:00:00	3600	60.8	77	46.7	65.8	64.1	58.6	53.8
02Jan 14	17:00:00	3600	53.3	70.5	37.9	60.8	57.7	44.4	40.6
02Jan 14	18:00:00	3600	51.1	68.8	37.8	58.2	52.4	42.7	40.2
02Jan 14	19:00:00	3600	52.1	69.7	38.4	59.6	54.9	42.9	40.2
02Jan 14	20:00:00	3600	51.3	69.9	37.9	58.5	52.9	43.4	40.2
02Jan 14	21:00:00	3600	50	74.3	37.6	56.2	51.7	43.2	40.3
02Jan 14	22:00:00	3600	49.9	69.8	37.2	56.2	52	42.8	39.3
02Jan 14	23:00:00	3600	55.3	84.6	40.3	60.6	57.9	49.5	44
03Jan 14	00:00:00	3600	51.2	74.2	37.2	57	54.4	45.4	40.3
03Jan 14	01:00:00	3600	52.6	80.9	35.7	58.2	55.6	47.2	40.6
03Jan 14	02:00:00	3600	55.2	78.9	37.6	61.4	58.5	48.2	42.3
03Jan 14	03:00:00	3600	51.7	78.1	36.5	56.6	53.8	45.6	40.3
03Jan 14	04:00:00	3600	54.9	81.6	37.1	59.7	57.1	48.6	42.9
03Jan 14	05:00:00	3600	55.2	76.9	41	60.8	58.2	50.3	45
03Jan 14	06:00:00	3600	58	84.8	42.4	63.4	60.5	52.4	47.1
03Jan 14	07:00:00	3600	62.4	84.1	46.3	67.4	65.7	59.7	51.4
03Jan 14	08:00:00	3600	62.5	77.1	49.8	67.2	65.8	60.6	56.3
03Jan 14	09:00:00	3600	63.3	77.8	51	68.2	66.5	61.3	55.8
03Jan 14	10:00:00	3600	62.3	81.3	50.3	67.6	65.9	59.5	53.6
03Jan 14	11:00:00	3600	63.6	84.9	53.7	67.9	66.3	61.5	58.1
03Jan 14	12:00:00	3600	61.8	88.4	50.9	66.1	64.6	59.8	55.5
03Jan 14	13:00:00	3600	60	76.9	50.4	65	63.6	57.7	53.3
03Jan 14	14:00:00	505.7	62	76.5	52.9	66.3	64.9	60.3	56.3
03Jan 14	14:12:54	2825.8	62.7	86.4	47.4	67.3	65.8	60.6	55.9
03Jan 14	15:00:00	3600	61.7	79.1	49.4	66.3	64.8	59.6	55.7
03Jan 14	16:00:00	3600	59.9	79.9	43.9	64.8	63.2	57.7	52.3
03Jan 14	17:00:00	3600	54.5	71	42	61.7	58.9	47.3	44.2
03Jan 14	18:00:00	3600	55.4	79.5	42.4	62	58.7	47.7	44.4
03Jan 14	19:00:00	3600	58.3	80.1	42.1	64.5	61.4	50.1	45
03Jan 14	20:00:00	3600	60.5	83.9	43	66.1	62.8	52.4	46.2
03Jan 14	21:00:00	3600	59.4	83.7	42.1	65.2	61.9	50.3	45.2

03Jan 14	22:00:00	3600	58.9	83.7	39.6	64.6	61.4	51.7	42.6
03Jan 14	23:00:00	3600	49.5	74.8	36.5	54.6	48.9	41.4	38.9
04Jan 14	00:00:00	3600	46.8	67.3	35.8	50	45.1	39.4	37.6
04Jan 14	01:00:00	3600	45.7	69.9	35.3	47.9	43.4	38.7	37.2
04Jan 14	02:00:00	3600	41.7	68.1	33.1	40.8	39.2	36.7	35.2
04Jan 14	03:00:00	3600	42.2	65.2	31.6	44.6	41.1	36.7	34
04Jan 14	04:00:00	3600	45.8	67.6	29.7	48.6	43.9	35.9	31.7
04Jan 14	05:00:00	3600	49.3	66.4	34.7	53.3	52.3	47.7	38.4
04Jan 14	06:00:00	3600	47.6	69.9	28.8	51.1	44.2	37.6	32
04Jan 14	07:00:00	3600	50.7	71.7	33.4	57.1	52.4	39.6	36.1
04Jan 14	08:00:00	3600	52.9	76.6	35.9	58.4	54.2	42	39.1
04Jan 14	09:00:00	3600	54.6	79.3	37	61.3	57.2	43.5	39.7
04Jan 14	10:00:00	3600	56.5	81.3	37	62.8	59.3	45.2	39.7
04Jan 14	11:00:00	3600	53.5	70.4	36.5	60.8	57.8	45.6	39.6
04Jan 14	12:00:00	3600	54.6	70.2	36.9	61.8	59.3	46.3	40
04Jan 14	13:00:00	3600	52.8	69.8	37.1	60	56.2	44.1	39.9
04Jan 14	14:00:00	3600	53	70.8	36.4	60.2	57.2	43.4	39.3
04Jan 14	15:00:00	3600	53.7	70.1	35.9	61.2	58.2	43.4	39.2
04Jan 14	16:00:00	3600	53.6	70.8	37.8	61	57.9	43.8	40.5
04Jan 14	17:00:00	3600	52.7	69.8	38.5	60.4	55.4	42.2	40.3
04Jan 14	18:00:00	3600	52.4	71	39.1	59.4	55.1	43.2	41.1
04Jan 14	19:00:00	3600	52.2	71.6	39.7	58.8	54.2	44.8	42.2
04Jan 14	20:00:00	3600	53.1	79.3	39.1	59.9	56	44.4	41.2
04Jan 14	21:00:00	3600	50	72.7	37.4	55.8	51.2	42.3	40
04Jan 14	22:00:00	3600	49.1	69.9	36.7	53.8	48.9	41.2	39.3
04Jan 14	23:00:00	3600	54.2	74.4	36.7	60.6	56	41.3	39.2
05Jan 14	00:00:00	3600	43.8	66.2	35.7	44.8	42	39.2	37.8
05Jan 14	01:00:00	3600	44.6	68.4	34.6	43.1	40.2	37.8	36.3
05Jan 14	02:00:00	3600	42.3	67.4	33.8	41.2	39.8	37.1	35.3
05Jan 14	03:00:00	3600	44	67	33.4	41.7	39.1	36.2	34.8
05Jan 14	04:00:00	3600	38.8	61.5	33.1	39.9	38.6	36.3	35
05Jan 14	05:00:00	3600	38.2	62.5	31.5	39.7	38.3	35.1	33.4
05Jan 14	06:00:00	3600	45	70.5	33.7	46.1	40.7	37.3	35.4
05Jan 14	07:00:00	3600	45.8	66.7	36	47.5	42.9	39.2	37.6
05Jan 14	08:00:00	3600	47.8	67.3	36.1	51.9	46.9	40.7	38.2
05Jan 14	09:00:00	3600	49.3	68	36.7	53.8	50	42.3	39.2
05Jan 14	10:00:00	3600	50.6	68.4	36.7	57.6	52.2	42.8	39.3
05Jan 14	11:00:00	3600	52	70.4	39.6	58.2	53	45.4	42.3
05Jan 14	12:00:00	3600	54.4	84.7	41	60.6	57.3	46.9	43.2
05Jan 14	13:00:00	3600	53.7	72.9	40.2	60.6	57.8	47.5	43.2
05Jan 14	14:00:00	3600	52.1	71.3	38.1	58.6	54.7	44.4	41.1
05Jan 14	15:00:00	3600	52.1	71.4	37.4	59.7	55	42.3	39.7
05Jan 14	16:00:00	3600	52.6	71.6	38.7	59.9	55.8	45.7	41.9
05Jan 14	17:00:00	3600	58.3	87.6	42.2	62.8	60.5	51.9	46.4

05Jan 14	18:00:00	3600	54.1	72	42.1	61	57.3	48.1	44.5
05Jan 14	19:00:00	3600	53	69.4	39.2	60.5	56.4	44.4	41.7
05Jan 14	20:00:00	3600	52.4	72.7	39.9	59	54.4	45.2	42.1
05Jan 14	21:00:00	3600	52.5	77.2	39.9	58.7	55.2	46.1	42.5
05Jan 14	22:00:00	3600	51.3	75.4	38.4	57	52.6	43.7	41
05Jan 14	23:00:00	3600	47.6	71.5	36.9	52.4	48	41.1	39
06Jan 14	00:00:00	3600	47.9	76.9	36.7	52.4	48.6	41	38.5
06Jan 14	01:00:00	3600	48.6	71.3	35.3	54.2	51.1	42.5	38.6
06Jan 14	02:00:00	3600	48.7	72.2	33.5	54.3	51.2	42.7	38
06Jan 14	03:00:00	3600	51.2	74.6	35.1	56.6	53.9	45.3	39.3
06Jan 14	04:00:00	3600	58.5	82.1	40.3	64.2	61.4	52.9	47
06Jan 14	05:00:00	3600	60	81.8	44	65.7	63.2	55.1	48.5
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06Jan 14	07:00:00	3600	62	86.5	46.6	66.8	65.1	58.2	52
06Jan 14	08:00:00	3600	63.2	84.2	51.7	67.2	65.9	61.4	56.4
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06Jan 14	10:00:00	3600	60.1	81.4	46.8	65.4	63.6	57.2	51.5
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06Jan 14	17:00:00	3600	57.2	76.7	42.9	63.5	61.5	52.1	47
06Jan 14	18:00:00	3600	56.5	79.7	43.2	63	60.5	50.5	45.7
06Jan 14	19:00:00	3600	55.3	80.9	40.8	61.4	58.8	47.7	43.7
06Jan 14	20:00:00	3600	52	75.6	39.9	58.2	53.7	44.5	42
06Jan 14	21:00:00	3600	50.1	69.1	38.2	55.7	50.8	42.9	40.5
06Jan 14	22:00:00	3600	50.3	69.8	38.2	56.3	53.1	44.9	41.6
06Jan 14	23:00:00	3600	49.5	75.3	37.2	55	51.8	43.5	39.6
07Jan 14	00:00:00	3600	48.3	73.4	37.4	53.6	50.7	42.1	39.2
07Jan 14	01:00:00	3600	49.2	71.8	37.6	54.5	51.9	44.2	40.4
07Jan 14	02:00:00	3600	48	73.2	33.6	52.7	49.7	42.5	37.4
07Jan 14	03:00:00	3600	45.8	69.7	33.3	50.8	47.6	39.1	36
07Jan 14	04:00:00	3600	48.2	73.4	35.9	52.9	50.1	42.9	39
07Jan 14	05:00:00	3600	50.3	76.2	38.2	55.6	52.7	44.9	41.4
07Jan 14	06:00:00	3600	53.1	71.8	39.9	59.4	56.1	46.9	43.7
07Jan 14	07:00:00	3600	59	76.5	44	65.2	63.2	55.1	48.7
07Jan 14	08:00:00	3600	61.8	80.5	48.2	66.4	64.8	58.3	51.9
07Jan 14	09:00:00	3600	58.4	75.7	45.1	64.6	62.8	54	49.3
07Jan 14	10:00:00	3600	56.7	70.7	43.6	62.6	60.6	52.8	47.1
07Jan 14	11:00:00	3600	57.7	73.3	48.1	63.2	61.3	54.8	51.3
07Jan 14	12:00:00	3600	58	78.2	48.2	63.4	61.5	55.3	51.7
07Jan 14	13:00:00	3600	59.5	82.1	47.6	64.3	62.4	55.6	52.7

07Jan 14	14:00:00	3600	59.1	81.1	48	64.1	62.6	56	51.6
07Jan 14	15:00:00	3600	58.9	86.4	45.9	63.8	61.8	53.6	49.6
07Jan 14	16:00:00	3600	57.3	77.9	44.5	63.3	61.3	53.4	48.6
07Jan 14	17:00:00	3600	56.5	70	42	63.8	61.6	47.7	44.2
07Jan 14	18:00:00	3600	54.5	71	42.4	61.9	58.8	46.1	44
07Jan 14	19:00:00	3600	54.6	75	41.3	61.9	58.1	45.8	43.5
07Jan 14	20:00:00	3600	52.4	71.8	40.8	59.4	55.2	45	42.9
07Jan 14	21:00:00	3600	52.5	73	40.5	58.8	54.9	45.1	42.6
07Jan 14	22:00:00	3600	51	73.5	39.1	56.1	52.7	44.6	41.8
07Jan 14	23:00:00	3600	47.9	73.3	36.9	52.8	49.2	42.6	40.1
08Jan 14	00:00:00	3600	52.2	81.7	36.2	57.1	53.1	42.5	38.6
08Jan 14	01:00:00	3600	54.8	80.2	35.8	60.6	57	44.8	39.2
08Jan 14	02:00:00	3600	53.8	81.7	35.4	59.2	55.8	44.9	39.3
08Jan 14	03:00:00	3600	50.8	71.7	33.8	57.4	53.8	42.9	37.7
08Jan 14	04:00:00	3600	48.6	74.7	33	55.5	51.5	40.4	36.6
08Jan 14	05:00:00	3600	44.5	67.3	34.9	47.6	43.8	39.8	37.6
08Jan 14	06:00:00	3600	49.5	67.6	37.9	55.9	51.7	43.3	40.3
08Jan 14	07:00:00	3600	57.8	73	41.6	64.7	62.6	52.2	44.3
08Jan 14	08:00:00	3600	60.4	77.9	45.7	65.4	64.3	58.1	51.5
08Jan 14	09:00:00	3600	59.1	76.5	45.1	64.7	63.3	55.4	49.2
08Jan 14	10:00:00	3600	58.7	84.8	41.5	64.4	62.1	52.8	46.9
08Jan 14	11:00:00	3600	57.9	85.6	44.5	63.6	61.5	54.1	49.1
08Jan 14	12:00:00	3600	56.4	71.8	42.7	62.8	60.5	52.2	48
08Jan 14	13:00:00	3600	56.8	75.6	37.7	63.3	61	52	43.9
08Jan 14	14:00:00	3600	57.9	70.4	43.7	63.8	62	54.3	48.3
08Jan 14	15:00:00	3600	57.4	70	44.5	62.8	60.8	55.1	50.7
08Jan 14	16:00:00	3600	57.2	72.7	42	63.2	61.2	53.5	48.5
08Jan 14	17:00:00	3600	56	72.5	38.2	63.1	60.7	46.3	40.9
08Jan 14	18:00:00	3600	55	69.9	37.8	62.7	60.2	45.3	40.5
08Jan 14	19:00:00	3600	53.7	69.9	35.5	61.7	58.5	44.4	38.8
08Jan 14	20:00:00	3600	52.8	69.2	34.7	60.9	55.8	42.7	38.7
08Jan 14	21:00:00	3600	51.5	71	35.8	57.7	52.2	41.5	38.6
08Jan 14	22:00:00	3600	50.7	70.1	39.6	55.6	50.3	43.8	41.5
08Jan 14	23:00:00	3600	46.5	67.5	38.8	47.4	44.9	42.4	40.6
09Jan 14	00:00:00	3600	45.2	65.4	36.5	45.4	43.9	40.7	38.8
09Jan 14	01:00:00	3600	42	72.5	31.7	40.8	39.8	37	34.8
09Jan 14	02:00:00	3600	38.3	56.1	32.5	41.5	40.5	37.5	35.3
09Jan 14	03:00:00	3600	40.6	62.7	32.6	42.3	40.9	37.6	35.3
09Jan 14	04:00:00	3600	46.4	71	34	48.5	42.6	38.7	36.5
09Jan 14	05:00:00	3600	49	69.6	35.8	54.3	48.3	42.1	38.9
09Jan 14	06:00:00	3600	52.5	70.5	40.8	58.3	54.8	47	43.3
09Jan 14	07:00:00	3600	59.6	73.8	45.5	66.3	64.1	55.1	48.9
09Jan 14	08:00:00	3600	63.7	83.3	50.4	68.9	67.9	60.6	54.9
09Jan 14	09:00:00	3600	60.9	79	46.8	67.2	65.3	56.4	52.4

09Jan 14	10:00:00	3600	58	78.9	45.2	64.1	61.8	54.5	49
09Jan 14	11:00:00	3600	58.9	77.9	47.7	64.8	62.7	55	52
09Jan 14	12:00:00	3600	58.8	77.8	46.6	63.8	61.8	56.6	53
09Jan 14	13:00:00	3600	56.9	73.8	44.1	62.9	61.2	53.4	47.7
09Jan 14	14:00:00	935.6	59.7	72	50.3	64.8	63.6	56.7	52.4



**Report Noise and Vibration Stn.3 Church of Ireland Building  
Grangegorman**

**for Roadbridge**

**Project: Site Infrastructure & Public Realm Works**

**Monitoring Period: 9 Dec 2013 to 9 Jan 2014**

<b>Revision</b>	<b>Prepared By</b>	<b>Date</b>	<b>Approved</b>	<b>Date</b>
<b>01</b>	<b>K. O'Brien</b>	<b>9 Jan 2014</b>	<b>MH</b>	<b>10 Jan 2014</b>



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## **Contents**

1.	Introduction.....	4
2.	Methodology .....	4
2.1	Vibration .....	4
2.2	Noise .....	4
3.	Results .....	5
3.1.1	Vibration : Located at the Church Building, Grangegorman. ....	5
3.2.1	Noise : Located at the Church Building, Grangegorman.....	9

## **1. Introduction**

At the request of Roadbridge, our company Environmental Measurements has carried out noise and vibration monitoring at the Church of Ireland Building, Grangegorman, Dublin.

The purpose of the survey was to:

1. Measure the noise and vibration levels impacting on the Church Building while Roadbridge carried out works as part of the Grangegorman redevelopment.

## **2. Methodology**

### **2.1 Vibration**

One Instantel Model MiniMate Plus vibration monitor was installed at the Church Building.

This monitor is a triaxial velocity meter which measures peak particle velocity (ppv) in mm/sec together with the frequency at peak. This allows for the calculation of acceleration and displacement at peak.

A specification sheet for the Instantel Model Mini Mate Plus accompanies this report.

### **2.2 Noise**

One Larson Davis Model 812 noise monitor was installed at the Church Building.

This monitor is an integrating sound level meter which measures the standard sound level parameters of Leq, Max, Min, Pk, UnwPk and Lns.

A specification sheet for the Larson Davis Model 812 accompanies this report.

### **3. Results**

#### **3.1.1 Vibration : Located at the Church Building, Grangegorman.**

Monitoring covers the period from 9 Dec 2013 to 9 Jan 2014. A Peak Particle Velocity (PPV) of 2.03mm/sec was recorded during this monitoring run.

This level is below the level of vibration required to have potential for cosmetic damage.  
Ref: BS 7385 Part 2 1993 Evaluation and measurement for vibration in buildings.



## Event Report

**Histogram Start Time** 16:00:46 December 9, 2013  
**Histogram Finish Time** 15:13:17 December 16, 2013  
**Number of Intervals** 2006 at 5 minutes  
**Range** Geo :254 mm/s  
**Sample Rate** 1024sps

**Serial Number** BE8875 V 10.52-8.17 MiniMate Plus  
**Battery Level** 6.9 Volts  
**Calibration** April 13, 2013 by Instantel  
**File Name** J875F3PG.HA0

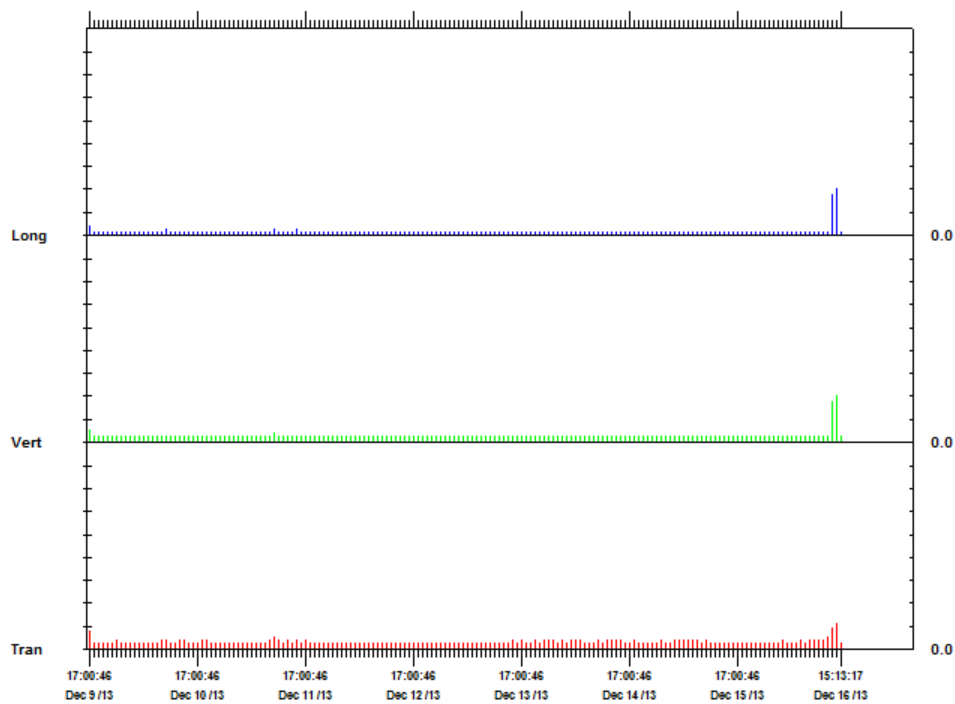
### Notes

### Post Event Notes

Client: Roadbridge  
 Location: Church, Grangegorman  
 User: Environmental Measurements

	Tran	Vert	Long	
PPV	1.14	2.03	2.03	mm/s
ZC Freq	30	37	39	Hz
Date	Dec 16 /13	Dec 16 /13	Dec 16 /13	
Time	14:05:46	14:05:46	14:05:46	
Sensorcheck	Passed	Passed	Passed	

**Peak Vector Sum** 2.31 mm/s on December 16, 2013 at 14:05:46



Time Scale: 1 hour /div Amplitude Scale: Geo: 1.000 mm/s/div

Printed: January 13, 2014 (V 8.12 - 8.12)

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## Event Report

<b>Histogram Start Time</b>	15:28:51 December 16, 2013	<b>Serial Number</b>	BE8875 V 10.52-8.17 MiniMate Plus
<b>Histogram Finish Time</b>	14:26:13 January 3, 2014	<b>Battery Level</b>	6.8 Volts
<b>Number of Intervals</b>	5171 at 5 minutes	<b>Calibration</b>	April 13, 2013 by Instantel
<b>Range</b>	Geo :254 mm/s	<b>File Name</b>	J875F42D.O30
<b>Sample Rate</b>	1024sps		

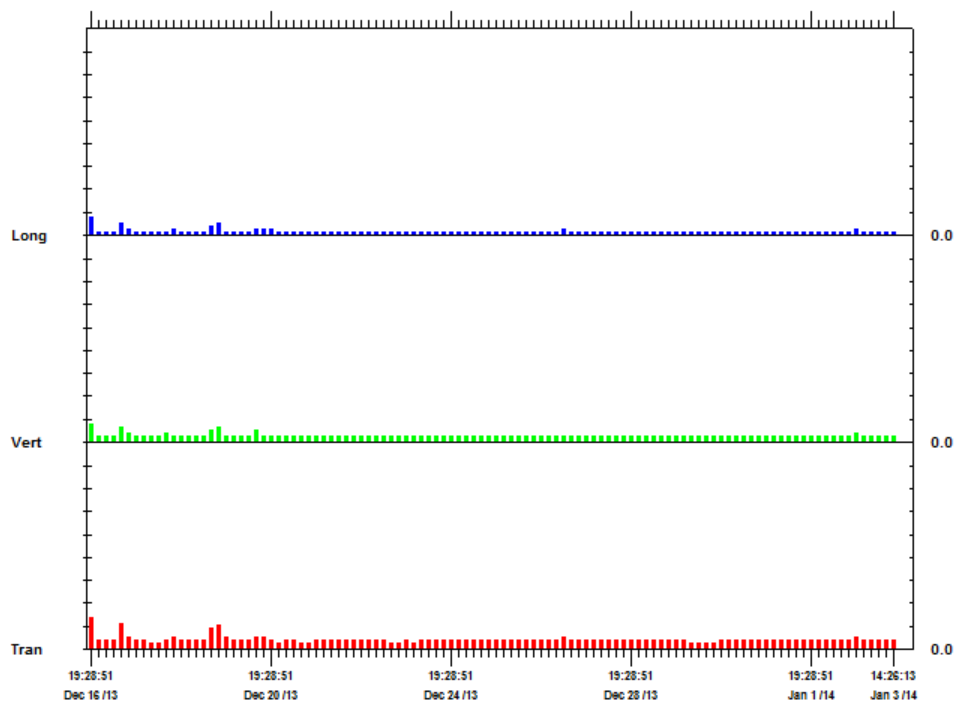
### Notes

### Post Event Notes

Client: Roadbridge  
 Location: Church, Grangegorman  
 User: Environmental Measurements

	Tran	Vert	Long	
PPV	1.40	0.762	0.762	mm/s
ZC Freq	27	32	64	Hz
Date	Dec 16 /13	Dec 16 /13	Dec 16 /13	
Time	15:33:51	15:38:51	15:33:51	
Sensorcheck	Passed	Passed	Passed	

Peak Vector Sum 1.57 mm/s on December 16, 2013 at 15:38:51



Time Scale: 4 hours /div Amplitude Scale: Geo: 1.000 mm/s/div

Printed: January 13, 2014 (V 8.12 - 8.12)

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## Event Report

Histogram Start Time 14:36:16 January 3, 2014  
 Histogram Finish Time 14:36:27 January 9, 2014  
 Number of Intervals 1728 at 5 minutes  
 Range Geo :254 mm/s  
 Sample Rate 1024sps

Serial Number BE8875 V 10.52-8.17 MiniMate Plus  
 Battery Level 6.9 Volts  
 Calibration April 13, 2013 by Instantel  
 File Name J875F4ZN.8G0

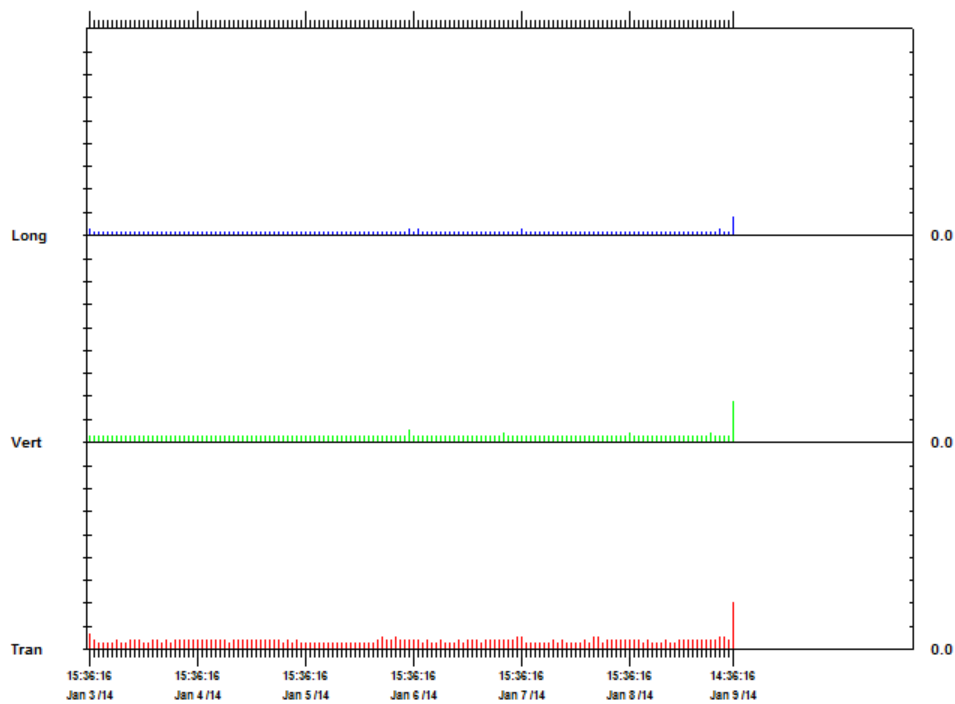
### Notes

### Post Event Notes

Client: Roadbridge  
 Location: Church, Grangegorman  
 User: Environmental Measurements

	Tran	Vert	Long	
PPV	2.03	1.78	0.762	mm/s
ZC Freq	34	73	39	Hz
Date	Jan 9 /14	Jan 9 /14	Jan 9 /14	
Time	14:31:16	14:36:16	14:31:16	
Sensorcheck	Passed	Passed	Passed	

Peak Vector Sum 2.13 mm/s on January 9, 2014 at 14:31:16



Time Scale: 1 hour /div Amplitude Scale: Geo: 1.000 mm/s/div

Printed: January 13, 2014 (V 8.12 - 8.12)

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### 3.2.1 Noise : Located at the Church Building, Grangegorman.

Monitoring covers the period from 9 Dec 2013 to 9 Jan 2014.

Date	Time	Duration	Leq	Lmax	Lmin	L( 5)	L(10)	L(50)	L(90)
09Dec 13	15:54:38	321.6	58.5	81.7	48.3	61.4	59.3	53.9	51.1
09Dec 13	16:00:00	3600	62	80.1	43.1	68.2	66.7	54	47.6
09Dec 13	17:00:00	3600	49.9	67.2	38.6	54.9	53.1	46.8	41.3
09Dec 13	18:00:00	3600	47.4	67.6	37.7	52.8	50.8	42.4	40
09Dec 13	19:00:00	3600	46.8	64.5	39.1	52.2	50.2	44	41.7
09Dec 13	20:00:00	3600	46.3	62.9	41.3	51.3	49.1	44.2	42.8
09Dec 13	21:00:00	3600	47.3	62.7	41.4	51.5	49.7	45.6	44.1
09Dec 13	22:00:00	3600	45.5	61.2	41.2	48.5	46.5	44.3	43.1
09Dec 13	23:00:00	3600	44.1	60.6	39.8	46.3	44.8	43.1	41.6
10Dec 13	00:00:00	3600	43.8	60.7	38.1	45.7	44.6	42.9	41.3
10Dec 13	01:00:00	3600	41.6	60.9	36.5	44	42.9	40.2	38.5
10Dec 13	02:00:00	3600	39.3	63.7	31.9	41.9	40.9	38.2	34.6
10Dec 13	03:00:00	3600	39.9	59.4	33.2	41.2	39.9	37.2	35.3
10Dec 13	04:00:00	3600	38.8	60.7	32.1	42.5	40.9	37.5	34.1
10Dec 13	05:00:00	3600	42	63.2	34.4	45.4	43	40	37.8
10Dec 13	06:00:00	3600	46.4	63.4	37.4	51.5	49.2	43.9	41
10Dec 13	07:00:00	3600	52.8	68	42	57.9	56.3	50.4	45.3
10Dec 13	08:00:00	3600	67.5	84.1	47	76.1	69.4	54.8	51.1
10Dec 13	09:00:00	3600	71.5	88.7	44.8	79.8	75.7	57.2	52
10Dec 13	10:00:00	3600	55.9	82.3	41.1	61.8	60	51.5	44.4
10Dec 13	11:00:00	3600	55.4	70.5	43.8	61.4	59.6	50.9	46.2
10Dec 13	12:00:00	3600	58.3	84.8	43.8	59.3	57.7	53.2	49.3
10Dec 13	13:00:00	3600	52.9	71.4	42.6	58.4	56.5	49.5	45.3
10Dec 13	14:00:00	3600	56.8	71.8	43.7	62	60.7	54.3	48.4
10Dec 13	15:00:00	3600	69.4	84.8	44.8	77.8	72.4	56.4	49.4
10Dec 13	16:00:00	3600	53.4	69.9	44.7	58	56.5	51.3	48.2
10Dec 13	17:00:00	3600	52.4	73.7	42.9	57	54.8	49.3	45.4
10Dec 13	18:00:00	3600	50.7	77	41.5	53.4	51.7	45.6	43.3
10Dec 13	19:00:00	3600	46.7	64	36.4	52.4	50.7	43.5	40.5
10Dec 13	20:00:00	3600	45.2	62.4	35.8	51.3	49	40.9	38.3
10Dec 13	21:00:00	3600	44.8	62.4	38.3	49.9	47.9	42.3	40.3
10Dec 13	22:00:00	3600	44.7	67.4	37.7	49.7	46.9	42.4	40.6
10Dec 13	23:00:00	3600	44.4	59.5	39.4	48.3	46.1	42.9	41.3
11Dec 13	00:00:00	3600	43.9	64.2	38.5	47.2	45.3	42.4	40.7
11Dec 13	01:00:00	3600	41.8	61.4	37.4	44.3	42.9	40.9	39.5



11Dec 13	02:00:00	3600	40.7	60.3	35	43.1	42.5	40.3	37.5
11Dec 13	03:00:00	3600	38.8	57.9	32	43.3	41.1	36.5	34.5
11Dec 13	04:00:00	3600	42.5	65.1	35.1	45.5	42.3	39.3	37.4
11Dec 13	05:00:00	3600	41.9	62.1	36.7	44.5	43.5	40.8	38.9
11Dec 13	06:00:00	3600	46.6	65	39.7	50.4	48.1	45.3	42.3
11Dec 13	07:00:00	3600	53.1	78	43.6	58.5	56	49.1	45.3
11Dec 13	08:00:00	3600	74.9	90.5	46.5	81.6	80	61.9	52.4
11Dec 13	09:00:00	3600	74.7	91.8	47.2	80.5	78.5	70.5	59.8
11Dec 13	10:00:00	3600	64.7	86.8	44	70.9	66.7	59	47.6
11Dec 13	11:00:00	3600	71.6	87.7	52.6	78.3	76.6	64.1	57.6
11Dec 13	12:00:00	3600	60.8	80	45.9	64.7	61.9	56.1	52.1
11Dec 13	13:00:00	3600	61.8	83.4	43.3	66	63.8	52.6	46.4
11Dec 13	14:00:00	3600	65	79.8	48	71.6	70	58.7	53.1
11Dec 13	15:00:00	3600	56.6	77.8	48.2	60.8	59.2	54.9	51.8
11Dec 13	16:00:00	3600	61.1	83	45.6	64.7	61.7	55.1	50.7
11Dec 13	17:00:00	3600	50.2	63.1	44.5	54.4	53	48.6	46.1
11Dec 13	18:00:00	3600	49.9	66.3	44.5	54.2	52.8	47.9	46
11Dec 13	19:00:00	3600	49.2	64.4	43.5	53.1	51.6	47.7	45.8
11Dec 13	20:00:00	3600	47.5	69.1	42.5	51.5	49.9	46	44.4
11Dec 13	21:00:00	3600	47.7	63.4	42.7	51.3	49.7	46.5	44.8
11Dec 13	22:00:00	3600	46.5	61.7	42.2	50.2	48.4	45.2	43.8
11Dec 13	23:00:00	3600	45.4	62.8	40.6	48.5	46.6	44.1	42.6
12Dec 13	00:00:00	3600	44.5	62.5	39.5	47.8	46	43.2	41.8
12Dec 13	01:00:00	3600	42.9	59.6	38.8	44.9	44.1	42.4	40.9
12Dec 13	02:00:00	3600	42.9	62.5	38.4	44.5	43.8	42.1	40.6
12Dec 13	03:00:00	3600	42.4	61	36.5	45	44.4	40.9	38.6
12Dec 13	04:00:00	3600	39.8	58.4	34.9	41.9	41.3	39.1	37.2
12Dec 13	05:00:00	3600	41.8	63.1	33.5	45.4	43.8	40.2	36.5
12Dec 13	06:00:00	3600	45.8	60.9	38.5	50.9	48	43.4	41.2
12Dec 13	07:00:00	3600	53.1	78.7	43.6	57.3	55.7	50.9	46.8
12Dec 13	08:00:00	3600	60.6	86.4	46.9	65.7	62.1	54.3	51.1
12Dec 13	09:00:00	3600	55.7	80.1	45.6	59.7	57.9	53.5	49.5
12Dec 13	10:00:00	3600	51.3	77.3	42.7	55	53.6	48.3	45
12Dec 13	11:00:00	3600	56.2	74	42.7	61.1	58.6	53.7	46.8
12Dec 13	12:00:00	3600	57.9	78.7	43.9	63.8	61	54.8	51
12Dec 13	13:00:00	3600	56.2	82.2	42.1	59.3	55.9	51.2	45.4
12Dec 13	14:00:00	3600	55.5	73.9	48.9	58.6	57.1	54.1	52
12Dec 13	15:00:00	3600	56.2	82	43	60.2	56.7	49.7	45.7
12Dec 13	16:00:00	3600	50.9	69.1	42.2	54.8	53.5	49.4	45.3
12Dec 13	17:00:00	3600	48.5	62.8	39.6	53.3	51.9	46.2	42.9
12Dec 13	18:00:00	3600	47.7	62.4	41.3	52.8	50.9	44.9	43.1
12Dec 13	19:00:00	3600	48.8	67.2	42.2	53.5	51.8	46.3	44.3
12Dec 13	20:00:00	3600	46.7	62.9	41.8	51.4	49.4	44.7	43.2
12Dec 13	21:00:00	3600	48.2	67.7	41.7	53.2	50.8	45.3	43.9

12Dec 13	22:00:00	3600	46.9	60.8	41.7	50.4	48.6	45.7	44.2
12Dec 13	23:00:00	3600	44.9	63.9	39.4	49.6	46.6	43	41.6
13Dec 13	00:00:00	3600	44.7	61.1	40.1	47.8	46.2	43.5	41.8
13Dec 13	01:00:00	3600	44.2	57.6	39.7	46.7	45.5	43.4	41.9
13Dec 13	02:00:00	3600	44.3	59.2	39.9	46.3	45.6	43.7	42.3
13Dec 13	03:00:00	3600	45.3	63.2	39.8	49.2	46.8	43	41.6
13Dec 13	04:00:00	3600	44.2	61.3	37.7	48.3	46.4	42.7	40.5
13Dec 13	05:00:00	3600	44.1	64.3	38.3	48.2	46.4	42.4	40.4
13Dec 13	06:00:00	3600	45.3	61.2	38.7	49.8	47.5	42.9	41.2
13Dec 13	07:00:00	3600	49.9	70.1	41.2	54.3	52.9	48.1	44.6
13Dec 13	08:00:00	3600	53.9	75	45.4	57.3	55.9	52.5	49.5
13Dec 13	09:00:00	3600	52.3	77.6	41.2	56	54.9	50.9	47.5
13Dec 13	10:00:00	3600	50.7	72.9	40.8	55	53.8	48.8	44.2
13Dec 13	11:00:00	3600	52.7	71.2	43.9	56.4	54.9	51	48
13Dec 13	12:00:00	3600	56.6	76.9	45.9	61.7	60.2	52.8	49
13Dec 13	13:00:00	3600	51.9	75.5	43.8	55.6	54.1	50	46.7
13Dec 13	14:00:00	3600	55.7	76.5	45.7	60.4	57.9	52.5	49.1
13Dec 13	15:00:00	3600	54.7	72.4	45.1	59.7	57.8	51.9	48.4
13Dec 13	16:00:00	3600	59.6	86.4	41.6	60.5	56.9	49.4	44.7
13Dec 13	17:00:00	3600	48.9	64.4	41.7	53.9	52.4	46.5	43.4
13Dec 13	18:00:00	3600	50.2	69.8	41.9	54.4	53	47.8	44.2
13Dec 13	19:00:00	3600	50.8	67.5	42	55.6	54.1	48	44.3
13Dec 13	20:00:00	3600	50.4	68	42	55.1	53.4	48.4	45.1
13Dec 13	21:00:00	3600	48.1	66	41.2	52.8	51.3	45.8	43.3
13Dec 13	22:00:00	3600	47.3	65.7	40.5	52.4	50	44.4	42.5
13Dec 13	23:00:00	3600	44.9	66.8	40.1	48.7	45.8	43.1	41.8
14Dec 13	00:00:00	3600	47.4	70.4	39.9	51	48	42.8	41.5
14Dec 13	01:00:00	3600	43.8	64.7	39.9	46.6	44.7	42.8	41.6
14Dec 13	02:00:00	3600	43.3	66.6	39.9	44.7	43.8	42.4	41.3
14Dec 13	03:00:00	3600	43.3	62.3	38	46.7	44.4	41.9	40
14Dec 13	04:00:00	3600	45.5	68.9	40.9	47.6	46	44.2	42.9
14Dec 13	05:00:00	3600	48.1	65.7	40.8	52.9	51.2	45.8	43.3
14Dec 13	06:00:00	3600	51.1	69.4	41.4	55.9	54.4	48.6	45.1
14Dec 13	07:00:00	3600	49.3	71.7	42.4	53.5	51.9	47.5	44.5
14Dec 13	08:00:00	3600	52.3	72.8	42.7	57	55.3	50.1	46.3
14Dec 13	09:00:00	3600	60.1	76.1	46.5	65.7	63.7	56.7	51.2
14Dec 13	10:00:00	3600	60.5	89.1	48	65	62.7	56.4	52.4
14Dec 13	11:00:00	3600	62.5	81.1	49.8	68.1	66.3	59	54.4
14Dec 13	12:00:00	3600	62.3	76.6	50.1	67.9	65.6	59	54.9
14Dec 13	13:00:00	3600	61.6	79.2	50	66.8	64.7	58.4	54.1
14Dec 13	14:00:00	3600	62.6	77	47.5	68.5	66.7	58.8	53.5
14Dec 13	15:00:00	3600	61.3	87.5	49.4	66.2	64.3	58.4	54.2
14Dec 13	16:00:00	3600	56.2	70.6	44.2	60.7	59.3	54.4	49.7
14Dec 13	17:00:00	3600	50.1	68	41.3	54.5	53	48	44.5

Report N&V Stn 3 Church of Ireland Building Grangegorman 9 Dec to 9 Jan 2014 EM

14Dec 13	18:00:00	3600	46.9	63.5	40.1	52.4	50.3	43.7	42
14Dec 13	19:00:00	3600	47.7	68.2	39.7	53.1	50.8	43.6	41.8
14Dec 13	20:00:00	3600	46.8	65.5	41.2	51.5	49.8	44.8	43.1
14Dec 13	21:00:00	3600	48.1	61.5	41.9	52.8	51.1	46	43.9
14Dec 13	22:00:00	3600	48.5	65.3	41.4	53.2	51.4	46.8	44.1
14Dec 13	23:00:00	3600	52	66.3	41.9	57.3	55.4	49.2	45.1
15Dec 13	00:00:00	3600	49.8	66.5	40.5	55.2	53.2	46.6	43.2
15Dec 13	01:00:00	3600	44.1	61.6	39.4	47.4	45.9	43	41.4
15Dec 13	02:00:00	3600	43.7	61.4	39.8	46.1	44.9	42.8	41.3
15Dec 13	03:00:00	3600	44.4	62.6	39.5	47	45.6	43.4	41.7
15Dec 13	04:00:00	3600	43.4	61.7	38	46	44.5	42	40.2
15Dec 13	05:00:00	3600	44.4	60.8	37.6	47.3	45.9	43.5	40.3
15Dec 13	06:00:00	3600	45.7	62.2	39.8	48.9	47.4	44.1	42.2
15Dec 13	07:00:00	3600	48.9	77.2	40.2	53.1	50.8	45.4	43
15Dec 13	08:00:00	3600	48.3	77.4	39.4	52.3	50.6	45.5	42.9
15Dec 13	09:00:00	3600	47.1	65.6	40	51.5	49.5	45.3	42.9
15Dec 13	10:00:00	3600	48.5	78.5	40.4	52.8	51	45.6	43
15Dec 13	11:00:00	3600	48.9	66.1	41.8	53.8	52.2	46.5	43.7
15Dec 13	12:00:00	3600	51.6	66.2	42.3	56.4	54.8	49.3	45.3
15Dec 13	13:00:00	3600	53	64.7	43.2	57.7	56.1	50.7	46.3
15Dec 13	14:00:00	3600	51.7	67.4	42	56.7	55.2	49.5	45.2
15Dec 13	15:00:00	3600	46.6	66.1	39.3	52.3	50.5	43	41
15Dec 13	16:00:00	3600	49.5	66.9	38.8	54.4	52.9	47.2	41.7
15Dec 13	17:00:00	3600	48.3	61.4	41.4	53	51.6	46	43.7
15Dec 13	18:00:00	3600	49.3	67.9	42.4	54.3	52.3	46.5	44.3
15Dec 13	19:00:00	3600	49.4	78.8	42.6	53.4	51.8	46.6	44.3
15Dec 13	20:00:00	3600	50.3	65.5	41.6	55	53.2	47.9	44.5
15Dec 13	21:00:00	3600	46.8	65.2	40.2	51.4	49.6	44.6	42.4
15Dec 13	22:00:00	3600	47	61.1	40.8	51.5	49.8	45	42.7
15Dec 13	23:00:00	3600	49	68.8	42	53.1	51.8	47.1	44.2
16Dec 13	00:00:00	3600	45.1	65	37.6	49.2	47.8	43.2	40.6
16Dec 13	01:00:00	3600	41	62.2	36.3	43.3	42.1	40	38.4
16Dec 13	02:00:00	3600	52	69.5	36.8	57.4	56.1	45.6	39.4
16Dec 13	03:00:00	3600	54.9	73.8	42.3	59	57.9	53.6	48.8
16Dec 13	04:00:00	3600	50.6	71	41.9	54.8	53.1	48.8	45.9
16Dec 13	05:00:00	3600	46.4	66	38.2	50.1	48.7	45	42.1
16Dec 13	06:00:00	3600	47.8	65.2	40.7	52.7	50.2	45.1	43.2
16Dec 13	07:00:00	3600	50.4	66.8	42.5	55.4	54	47.2	44.5
16Dec 13	08:00:00	3600	55.4	77.2	45.7	58.8	56.5	52.6	49
16Dec 13	09:00:00	3600	61.4	80.3	43.1	68.7	62.2	53.9	46.3
16Dec 13	10:00:00	3600	51.9	68.9	42.2	56.2	54.8	50.2	45.3
16Dec 13	11:00:00	3600	55.2	80.2	44.9	59.3	57.4	51.7	47.9
16Dec 13	12:00:00	3600	61.3	85.1	43.7	65.9	63.8	52.9	49.2
16Dec 13	13:00:00	3600	52.3	68.5	42.7	56.4	55.2	50.6	46

16Dec 13	14:00:00	3600	59.3	90.7	44.6	58.6	57	53.9	50.9
16Dec 13	15:00:00	1840.9	55.3	82	46.6	59.7	57.6	52.6	49.9
16Dec 13	15:35:07	1492.6	55.5	74	45.1	61.3	58.8	51.7	48.2
16Dec 13	16:00:00	3600	55.8	80.3	43	60.1	57.7	51.6	47.4
16Dec 13	17:00:00	3600	48.4	65.1	40.1	53.4	51.9	45.6	42.5
16Dec 13	18:00:00	3600	46.7	63.1	39.6	52.4	50.6	43.4	41.4
16Dec 13	19:00:00	3600	47.4	66.2	40.3	52.1	50.2	44.1	42.3
16Dec 13	20:00:00	3600	45	62.5	39.5	50	47.7	42.7	41.2
16Dec 13	21:00:00	3600	46.9	71.3	39.7	50.6	48.3	42.8	41.3
16Dec 13	22:00:00	3600	44.3	62.9	38.4	49.1	45.6	41.6	40.3
16Dec 13	23:00:00	3600	42.5	62.8	37.8	45.5	42.9	40.7	39.4
17Dec 13	00:00:00	3600	42.3	65.8	36.7	44	42	40.1	38.8
17Dec 13	01:00:00	3600	41	64.8	36.6	42.3	41.5	39.7	38.3
17Dec 13	02:00:00	3600	39.8	64.4	35.5	41	40.6	39	37.6
17Dec 13	03:00:00	3600	38.1	64	33.3	39.9	39.2	37.3	35.7
17Dec 13	04:00:00	3600	40.8	62.9	33.1	41.8	40.3	37.6	35.7
17Dec 13	05:00:00	3600	42.2	64.1	35.9	44.5	42.8	40.4	38.3
17Dec 13	06:00:00	3600	45.9	65.1	38.9	50.2	47.4	43.5	41.5
17Dec 13	07:00:00	3600	52.5	67	41.7	57.3	55.8	50.1	44.5
17Dec 13	08:00:00	3600	57	81.5	46.3	60.7	58.2	53.6	50.5
17Dec 13	09:00:00	3600	57.9	77.7	46.6	62.5	59.9	55.7	51.3
17Dec 13	10:00:00	3600	53	79.8	42.4	57	55.6	51.4	46.5
17Dec 13	11:00:00	3600	60.1	78.4	49.4	64.9	62.7	55.8	52
17Dec 13	12:00:00	3600	57.9	81.2	49.3	61.5	59.6	55.6	53
17Dec 13	13:00:00	3600	55.2	74.8	42.6	60.1	57.2	52.8	47.6
17Dec 13	14:00:00	3600	62	84.8	48.1	66.7	65	59.8	53.1
17Dec 13	15:00:00	3600	66.9	87.2	49.8	74.7	71.1	58.6	54.4
17Dec 13	16:00:00	3600	66.8	84.2	46.6	72.7	70.2	64.1	55.9
17Dec 13	17:00:00	3600	49	63	42.6	53.4	52	47.2	44.6
17Dec 13	18:00:00	3600	49.6	63	43.4	53.8	52.7	47.7	45.4
17Dec 13	19:00:00	3600	48.9	62	42.5	53.6	51.9	47.1	45
17Dec 13	20:00:00	3600	47.8	67.7	42.5	51.9	50.6	46.4	44.5
17Dec 13	21:00:00	3600	47.7	62	42.8	51.8	50.3	46.3	44.7
17Dec 13	22:00:00	3600	46.1	61.5	41.1	49.8	48	45.1	43.4
17Dec 13	23:00:00	3600	45.8	61.7	41.1	49.7	47.7	44.4	43
18Dec 13	00:00:00	3600	49.1	61.9	42.3	54	52.3	47	44.3
18Dec 13	01:00:00	3600	46.7	69.3	40.3	50.6	48.7	44.9	42.8
18Dec 13	02:00:00	3600	46.6	62.7	40.3	50.8	49.3	45.1	42.9
18Dec 13	03:00:00	3600	46.7	60.3	38.6	51.9	49.6	44.4	41.8
18Dec 13	04:00:00	3600	45.3	60.1	37.6	50.3	47.8	42.6	40.3
18Dec 13	05:00:00	3600	42.9	60.5	37.3	46.2	44.7	41.6	39.7
18Dec 13	06:00:00	3600	50.2	73.3	39.9	53.9	49.7	44.4	42.1
18Dec 13	07:00:00	3600	54.8	77.6	44.1	59.2	57.7	51.6	46.7
18Dec 13	08:00:00	3600	59.7	78.3	49.1	64.2	62.7	56.8	53.3

Report N&V Stn 3 Church of Ireland Building Grangegorman 9 Dec to 9 Jan 2014 EM

18Dec 13	09:00:00	3600	61.9	82.7	48.1	66.7	64.7	59.4	55.4
18Dec 13	10:00:00	3600	59.5	79.6	44.3	64.7	62	55.3	47.7
18Dec 13	11:00:00	3600	66.4	90.1	49.1	71	69.6	61.4	56.8
18Dec 13	12:00:00	3600	68.5	90.1	50.9	75.5	73.7	61.2	55.9
18Dec 13	13:00:00	3600	57.9	82.3	46.8	61.9	60.6	54.7	49.2
18Dec 13	14:00:00	3600	59.4	82	50.9	63.2	62.1	58	54.5
18Dec 13	15:00:00	3600	59.2	79.6	51.6	62.9	61.4	57.8	55.2
18Dec 13	16:00:00	3600	63.1	85.1	53	67.1	64.9	61.2	57.7
18Dec 13	17:00:00	3600	52.3	68	44	56.5	55.2	50.8	47
18Dec 13	18:00:00	3600	56.7	73	44.5	61.8	59.9	54	49.3
18Dec 13	19:00:00	3600	54.5	73.1	44.1	59.2	57.4	51.7	47.7
18Dec 13	20:00:00	3600	52.3	66.1	42.1	57.7	55.7	49.3	45.1
18Dec 13	21:00:00	3600	54.3	70.4	41.8	60.6	58.2	50.5	45.2
18Dec 13	22:00:00	3600	50	71.8	41	55.1	53.1	46.8	43.6
18Dec 13	23:00:00	3600	50.3	66.7	40.9	55.4	53.5	47.2	43.7
19Dec 13	00:00:00	3600	47	63.3	39.8	51.5	49.8	45.1	42.4
19Dec 13	01:00:00	3600	49.5	65.4	39.1	55.1	52.8	45.8	42.1
19Dec 13	02:00:00	3600	44.8	64.9	38.4	49.1	47.3	42.9	40.7
19Dec 13	03:00:00	3600	42.8	61.4	37.6	46.2	44.7	41.5	39.8
19Dec 13	04:00:00	3600	50.5	67.5	37.5	56.9	54.2	45.3	40.6
19Dec 13	05:00:00	3600	42.2	65.9	36	44.8	43	40.4	38.4
19Dec 13	06:00:00	3600	49.3	66.6	39.5	54.8	52.2	45.8	42.6
19Dec 13	07:00:00	3600	55.2	73.6	40.9	59.9	58.9	52.4	44.9
19Dec 13	08:00:00	3600	60	77.9	50.9	64.6	62.6	58.4	54.2
19Dec 13	09:00:00	3600	65.7	94.7	50.9	71.2	69.4	57.7	53.5
19Dec 13	10:00:00	3600	67	89.2	48.1	72.2	69.5	63.7	51.4
19Dec 13	11:00:00	3600	70.3	89.6	51.5	76.1	74.8	66.2	57.5
19Dec 13	12:00:00	3600	66.5	84	53.9	71.5	69.8	64.2	58.3
19Dec 13	13:00:00	3600	63.5	82.3	48.4	69.8	67.7	56.9	51.5
19Dec 13	14:00:00	3600	65.3	81.8	52.4	70.5	68.8	62.2	58
19Dec 13	15:00:00	3600	66.2	83.4	54.9	70.8	69.7	63.9	60.8
19Dec 13	16:00:00	3600	66	90.7	48.7	70.8	68.8	63.8	55.8
19Dec 13	17:00:00	3600	51.4	66.1	43.1	55.7	54.5	49.9	45.8
19Dec 13	18:00:00	3600	51	61.7	43.3	55.6	54.4	49	45.5
19Dec 13	19:00:00	3600	52.1	71.2	43.7	56.5	55.3	49.8	46.2
19Dec 13	20:00:00	3600	52.3	79.5	43.2	56.7	54.9	48.8	45.5
19Dec 13	21:00:00	3600	49.7	66.1	43	54.4	52.7	47.4	44.7
19Dec 13	22:00:00	3600	48.3	67.3	41.5	52.7	50.9	46.2	44.1
19Dec 13	23:00:00	3600	47.5	63.2	41.8	52.1	50.2	45.7	43.8
20Dec 13	00:00:00	3600	47.2	67.1	41.5	51	49.3	45.3	43.3
20Dec 13	01:00:00	3600	46.2	58.5	40.7	50.3	48.7	44.6	42.8
20Dec 13	02:00:00	3600	45	60.5	39.9	48.8	46.8	43.7	42.1
20Dec 13	03:00:00	3600	45.2	62.4	39.4	49.3	47.1	43.5	41.6
20Dec 13	04:00:00	3600	43.8	64.5	38.2	47.6	45.8	42.5	41.1

20Dec 13	05:00:00	3600	44.3	66	38.1	47.5	45.7	42.6	40.9
20Dec 13	06:00:00	3600	46.5	63.7	40.5	50.9	48.7	44.8	43.2
20Dec 13	07:00:00	3600	58.4	77.4	42.6	62.9	59.5	55.5	44.6
20Dec 13	08:00:00	3600	65	81.9	54.3	70.6	69.3	61.4	57.6
20Dec 13	09:00:00	3600	63.9	82.7	52	67.8	66.5	62.4	57.7
20Dec 13	10:00:00	3600	62.4	81.4	47.7	67.7	66	59.8	50.1
20Dec 13	11:00:00	3600	64.3	84.6	54.3	68.8	67.1	61.8	58.7
20Dec 13	12:00:00	3600	55.4	71.4	47.7	59.6	58.4	53.7	50.3
20Dec 13	13:00:00	3600	53.9	67.2	47	58.1	56.7	52.5	49.3
20Dec 13	14:00:00	3600	53.8	65.9	46.8	57.7	56.7	52.6	49.2
20Dec 13	15:00:00	3600	53.9	66.7	45.7	58.7	57.1	52.1	48.2
20Dec 13	16:00:00	3600	56.2	72.8	46.4	60.9	59.2	53.6	49.6
20Dec 13	17:00:00	3600	58.6	72.8	47.1	64.2	62	55.3	50.8
20Dec 13	18:00:00	3600	60.9	77.1	49.1	66.4	64.1	57.8	53.2
20Dec 13	19:00:00	3600	60.6	76.7	49.4	66.3	64.4	57.8	53.1
20Dec 13	20:00:00	3600	55.9	70.7	46.5	60.6	59	53.5	49.3
20Dec 13	21:00:00	3600	56.8	70.7	45.4	61.9	60.2	54.1	49.6
20Dec 13	22:00:00	3600	51.5	64.9	43.7	56.5	54.7	49.2	46
20Dec 13	23:00:00	3600	51.3	66.3	43.5	56.4	54.6	48.9	46.1
21Dec 13	00:00:00	3600	51.7	66.5	43.3	56.6	54.8	49.5	46.3
21Dec 13	01:00:00	3600	50.2	65.5	42.4	54.8	53.3	48.1	45.3
21Dec 13	02:00:00	3600	48.4	61.8	42.3	52.5	51	47	45
21Dec 13	03:00:00	3600	49.5	70.5	42.8	53.9	52.3	47.7	45.2
21Dec 13	04:00:00	3600	49.4	64.1	40.8	54.4	52.5	46.8	44
21Dec 13	05:00:00	3600	49.4	64.8	41	54.9	52.6	46.6	43.4
21Dec 13	06:00:00	3600	52.3	67.9	41	57.8	55.3	48.7	43.9
21Dec 13	07:00:00	3600	53.8	70.7	43.5	59.3	57	49.8	46.1
21Dec 13	08:00:00	3600	52.5	71.4	42.9	57.5	55.8	49.8	46
21Dec 13	09:00:00	3600	50.5	63.7	43.2	55.4	53.7	48	45.3
21Dec 13	10:00:00	3600	52.3	63.6	43.5	56.7	55.4	50.4	46.7
21Dec 13	11:00:00	3600	51.3	73.1	42.9	56.1	54.6	48.7	45.4
21Dec 13	12:00:00	3600	50.9	66.9	42.8	55.7	54.1	48.7	45.2
21Dec 13	13:00:00	3600	51.4	66.3	43.1	56.3	54.9	49	45.2
21Dec 13	14:00:00	3600	56.8	72.4	46.7	61	59.7	55.6	51.5
21Dec 13	15:00:00	3600	55.3	72.4	43.5	60.1	59	52.2	46.6
21Dec 13	16:00:00	3600	50.3	71.1	41.3	55	53.3	47.6	44.5
21Dec 13	17:00:00	3600	48.5	72.6	41.4	53.6	52	45.8	43.7
21Dec 13	18:00:00	3600	50.4	70.3	41.9	55.1	53.1	47.2	44.4
21Dec 13	19:00:00	3600	48.4	65.6	41.6	53.5	51.2	45.9	43.8
21Dec 13	20:00:00	3600	48.1	62.3	41.7	53.3	51.3	45.5	43.6
21Dec 13	21:00:00	3600	47.8	63.5	43.2	52.2	50.4	46.1	44.5
21Dec 13	22:00:00	3600	48.7	65.4	41.8	53.4	51.6	46.7	44.1
21Dec 13	23:00:00	3600	47.5	73.5	41.5	51.9	49.9	45.4	43.4
22Dec 13	00:00:00	3600	48.2	69.2	41.3	52	50.4	45.8	43.5

Report N&V Stn 3 Church of Ireland Building Grangegorman 9 Dec to 9 Jan 2014 EM

22Dec 13	01:00:00	3600	49.6	70.3	41.1	54.4	52.5	46.3	43.3
22Dec 13	02:00:00	3600	46.9	60.5	40.8	51.1	49.5	45.3	43.2
22Dec 13	03:00:00	3600	47.1	71.9	40.4	50.9	49.4	45.2	43
22Dec 13	04:00:00	3600	48.2	61.9	40.8	52.8	51	45.9	43.4
22Dec 13	05:00:00	3600	47.5	62.7	39.7	52.4	50.4	45.3	42.4
22Dec 13	06:00:00	3600	49.6	68.6	38.5	55.1	52.8	46	42.1
22Dec 13	07:00:00	3600	46.3	67.3	38.4	51.4	48.7	43.7	41
22Dec 13	08:00:00	3600	47.7	72.1	39.4	52.3	50.3	44.7	42.2
22Dec 13	09:00:00	3600	51	79.9	40	55.3	53.5	46.9	43.4
22Dec 13	10:00:00	3600	54	81.8	40.5	53.9	51.4	45	42.9
22Dec 13	11:00:00	3600	50.6	73.2	41.3	54.8	52.9	46.7	43.4
22Dec 13	12:00:00	3600	49.8	66.5	42.4	55.1	53.4	46.7	44.4
22Dec 13	13:00:00	3600	49.5	68	42.2	54.3	52.8	47.1	44.4
22Dec 13	14:00:00	3600	49.1	63.9	42.9	53.7	52.4	47.4	44.9
22Dec 13	15:00:00	3600	53.5	70.5	42.5	59.1	57.1	48.9	44.6
22Dec 13	16:00:00	3600	48.1	66.2	41.7	53.4	51.5	45.3	43.6
22Dec 13	17:00:00	3600	49.2	65.7	41.5	54.1	52.6	46.8	43.8
22Dec 13	18:00:00	3600	48.9	67	41.5	54.4	52.3	44.8	43
22Dec 13	19:00:00	3600	47.7	69.3	41	53.2	50.8	44.5	43.1
22Dec 13	20:00:00	3600	48.5	66.2	41.9	53.6	50.8	45.3	43.6
22Dec 13	21:00:00	3600	47.2	64.6	41.5	52.2	49.8	44.8	43.2
22Dec 13	22:00:00	3600	45.9	66.8	41.2	49.5	46.9	43.8	42.4
22Dec 13	23:00:00	3600	44.6	66.3	40.2	47.7	45.7	43.1	41.7
23Dec 13	00:00:00	3600	44.9	64.2	40	49.2	46.7	42.8	41.4
23Dec 13	01:00:00	3600	42.5	61.3	38.6	44	43.5	41.9	40.7
23Dec 13	02:00:00	3600	41	66.3	36.8	42.6	41.9	40	38.6
23Dec 13	03:00:00	3600	42.2	67.6	37.2	43.3	42.6	40.8	39.3
23Dec 13	04:00:00	3600	43.2	63.2	38.2	44.9	44.2	42.4	40.6
23Dec 13	05:00:00	3600	49.5	72.9	41	49.7	47.8	45.2	43.2
23Dec 13	06:00:00	3600	50.5	69.4	45	53.4	51.9	48.7	46.8
23Dec 13	07:00:00	3600	53.5	72.3	47.2	57.4	56	52.2	49.8
23Dec 13	08:00:00	3600	52.8	64.4	47	56.6	55.6	51.5	49.1
23Dec 13	09:00:00	3600	52.7	70.8	46.1	57.1	55.6	50.8	48.2
23Dec 13	10:00:00	3600	55.3	69.8	46.1	59.8	58.2	52.9	48.9
23Dec 13	11:00:00	3600	54.8	76.7	45.8	59.7	58	52.8	48.7
23Dec 13	12:00:00	3600	54.2	70.6	45.8	58.6	57.2	52.4	48.6
23Dec 13	13:00:00	3600	55.8	69.8	45.2	60.7	58.9	53.8	49.4
23Dec 13	14:00:00	3600	53.4	72.4	43.4	57.8	56.2	51.7	47.1
23Dec 13	15:00:00	3600	53.3	66.5	43.9	58.6	56.6	50.9	46.5
23Dec 13	16:00:00	3600	52.2	64.3	44.3	56.7	55.4	50.2	46.6
23Dec 13	17:00:00	3600	53.7	69	44.6	58.8	57.1	51.1	47
23Dec 13	18:00:00	3600	52.5	70.9	43.7	57.1	55.6	50.1	46.6
23Dec 13	19:00:00	3600	52.9	66.7	43.8	57.9	56.2	50.8	46.7
23Dec 13	20:00:00	3600	51.3	63.9	43.1	56.3	54.6	49	45.3

Report N&V Stn 3 Church of Ireland Building Grangegorman 9 Dec to 9 Jan 2014 EM

23Dec 13	21:00:00	3600	50.9	61.4	42.3	56.1	54.1	48.7	45.5
23Dec 13	22:00:00	3600	51.1	66.5	42.4	56.2	54.3	48.7	45.3
23Dec 13	23:00:00	3600	56.5	76.3	42.5	62	59.3	51.5	46.2
24Dec 13	00:00:00	3600	55.4	77.3	42.1	60.8	58.9	52.2	47
24Dec 13	01:00:00	3600	53.8	71.9	42.2	59.2	57.5	50.2	45.5
24Dec 13	02:00:00	3600	52.4	68.4	40.7	57.8	55.9	49.2	44.5
24Dec 13	03:00:00	3600	52.3	66.3	39.6	57.5	56	49.6	45.3
24Dec 13	04:00:00	3600	47.4	62.8	37.5	52.5	50.4	44.6	40.8
24Dec 13	05:00:00	3600	51	66.4	40.8	56.8	54.3	47.7	43.6
24Dec 13	06:00:00	3600	54	68.5	41.6	59.9	57.8	50.7	46
24Dec 13	07:00:00	3600	55.4	69.2	42.8	61.2	59	52.4	47.2
24Dec 13	08:00:00	3600	54.7	71.8	43.8	59.7	57.9	51.8	47.5
24Dec 13	09:00:00	3600	57.1	72.8	44.8	62.3	60.5	54.7	49.7
24Dec 13	10:00:00	3600	57.9	70.4	46.1	63.4	61.7	55.2	50.4
24Dec 13	11:00:00	3600	59.9	74.8	47.2	65.2	63.4	56.8	51.6
24Dec 13	12:00:00	3600	60.3	77.6	47.8	65.8	63.5	57.2	52.2
24Dec 13	13:00:00	3600	59	71.9	47.8	63.9	62.2	56.7	52
24Dec 13	14:00:00	3600	54.8	69.6	46.6	59	57.7	53	49.3
24Dec 13	15:00:00	3600	53.3	68.2	43.7	57.9	56.5	51.6	47
24Dec 13	16:00:00	3600	54.1	67.4	43.8	58.6	57.4	52.8	47.3
24Dec 13	17:00:00	3600	51.8	66.1	43.5	56.1	54.9	50.1	46.9
24Dec 13	18:00:00	3600	51.8	63.9	44.3	56.5	55	50	46.7
24Dec 13	19:00:00	3600	50.3	64	42.1	55	53.5	48.3	45.3
24Dec 13	20:00:00	3600	49.2	64.6	41.4	54.1	52.4	47	44.2
24Dec 13	21:00:00	3600	47.2	68.1	39.9	52.2	50	44.6	42.4
24Dec 13	22:00:00	3600	44.7	62.5	38.4	49.2	46.8	42.7	40.6
24Dec 13	23:00:00	3600	41.9	65.7	36.1	44.5	41.8	39.3	37.8
25Dec 13	00:00:00	3600	40.9	62.5	33.6	44.2	41.2	37.9	36.1
25Dec 13	01:00:00	3600	38.3	61.2	32.5	40.4	38.3	35.9	34.3
25Dec 13	02:00:00	3600	36.4	64.3	29.8	38.1	37.2	34.4	32.2
25Dec 13	03:00:00	3600	34.5	60.2	29.2	36.4	35.5	33.2	31.3
25Dec 13	04:00:00	3600	38.3	63.5	28.9	38.4	36.6	32.7	30.7
25Dec 13	05:00:00	3600	37.1	64.8	28	37.7	36.1	33.2	31.2
25Dec 13	06:00:00	3600	38.8	63.5	32	40.5	39.5	36.1	33.8
25Dec 13	07:00:00	3600	41.2	62	34.5	43.8	41.4	38.7	37
25Dec 13	08:00:00	3600	48.2	80.1	36.1	50.9	48.2	41.6	39.3
25Dec 13	09:00:00	3600	50.7	79.7	38.5	50.8	47.8	42.8	40.6
25Dec 13	10:00:00	3600	51.6	82.2	39.6	53.1	50.3	44.1	42
25Dec 13	11:00:00	3600	53.4	79.5	37.3	53.7	50.6	41.7	39.4
25Dec 13	12:00:00	3600	56.1	84	32.5	54.6	51.1	40.9	35.5
25Dec 13	13:00:00	3600	45	64.1	31.4	51.6	48.8	39.3	34.7
25Dec 13	14:00:00	3600	45.5	72.4	34.2	51.9	49.1	39.8	37.2
25Dec 13	15:00:00	3600	44.6	72.9	36.6	50.3	47.4	40.5	38.5
25Dec 13	16:00:00	3600	43.4	64.7	35.5	48.6	45	39.6	38.1



25Dec 13	17:00:00	3600	42.7	72.4	36	46.2	43	39.7	38.2
25Dec 13	18:00:00	3600	44.7	65.9	36.9	48.7	45.5	40.9	39.3
25Dec 13	19:00:00	3600	45	64.8	38.8	49.8	46.5	42.4	41
25Dec 13	20:00:00	3600	45.1	68	38.8	50.2	47.2	42.7	41.2
25Dec 13	21:00:00	3600	45.5	66.1	39.6	50.3	47	42.8	41.3
25Dec 13	22:00:00	3600	43.1	60.1	37.6	46.1	44.3	41.7	40
25Dec 13	23:00:00	3600	42.2	68.3	35.5	45.9	42.7	39.6	37.5
26Dec 13	00:00:00	3600	42.1	66	33.3	46.2	42.2	38	36.2
26Dec 13	01:00:00	3600	37.1	58.1	31.1	39.1	37.9	35.3	33.4
26Dec 13	02:00:00	3600	36.7	64.8	29.1	39.4	36.9	33.5	31.4
26Dec 13	03:00:00	3600	36.3	63.1	29.5	38.4	37	33.6	31.5
26Dec 13	04:00:00	3600	37.8	62.9	28.9	38.8	36.2	33.4	31.6
26Dec 13	05:00:00	3600	37.9	64.3	30.8	40.3	38.4	34.8	32.9
26Dec 13	06:00:00	3600	39	64.8	31.7	41.5	40.1	37.2	34.5
26Dec 13	07:00:00	3600	48.2	80.5	35.3	46.9	43.7	39.9	37.9
26Dec 13	08:00:00	3600	52.2	80.8	36.6	53.2	49.7	42.1	39.5
26Dec 13	09:00:00	3600	49.6	77.3	37.6	52	49.2	42.4	40.3
26Dec 13	10:00:00	3600	51.5	81.5	38	52.8	49.7	42.1	40
26Dec 13	11:00:00	3600	50.4	81.8	38	53.2	51.2	43.8	39.8
26Dec 13	12:00:00	3600	47.2	69.4	34.9	51.9	49.1	40.4	37.8
26Dec 13	13:00:00	3600	46.8	68.7	34.7	52.4	49.9	41.3	37.9
26Dec 13	14:00:00	3600	46.3	70	38.9	51.7	49.4	43.6	41.4
26Dec 13	15:00:00	3600	46.9	66.9	41.2	51.9	49.3	44.6	42.9
26Dec 13	16:00:00	3600	48.7	68.8	41.7	52.2	50	45.4	43.3
26Dec 13	17:00:00	3600	49.1	64.9	42.5	53.9	52.3	46.8	44.4
26Dec 13	18:00:00	3600	50	63.3	44.2	54.3	52.8	48.6	46.2
26Dec 13	19:00:00	3600	55.2	77.4	45.4	59.9	58.4	53	48
26Dec 13	20:00:00	3600	60.7	74.5	48.9	65.7	63.8	58.8	54.1
26Dec 13	21:00:00	3600	56.3	71.6	47.3	60.5	59.4	54.8	51.3
26Dec 13	22:00:00	3600	58.1	71.4	45.8	62.5	61.1	56.7	51.3
26Dec 13	23:00:00	3600	59.8	74.4	44	65.4	63.3	56.7	49.3
27Dec 13	00:00:00	3600	57.2	70.5	43.1	62.8	60.7	53.7	48.1
27Dec 13	01:00:00	3600	59.3	75.8	42.6	65.5	62.9	54.6	47.9
27Dec 13	02:00:00	3600	60.6	78.2	46.2	65.9	63.9	56.8	51
27Dec 13	03:00:00	3600	63.4	77.9	47.1	69.3	67.4	59.6	53.9
27Dec 13	04:00:00	3600	62.7	78.6	47	68.3	66	58.8	53.7
27Dec 13	05:00:00	3600	61.5	77	47.4	67	65.1	58.1	52.8
27Dec 13	06:00:00	3600	61.7	76.3	46.4	67.4	65.2	58.4	53.5
27Dec 13	07:00:00	3600	59.3	73.6	45.5	65.3	62.9	55.7	50.7
27Dec 13	08:00:00	3600	60.5	77	46.2	65.6	63.6	57.5	52.8
27Dec 13	09:00:00	3600	59.2	74	47	64.2	62.6	56.5	51.8
27Dec 13	10:00:00	3600	58.5	71.2	46.6	63.7	62.1	56	51
27Dec 13	11:00:00	3600	59.1	72.5	48.1	63.9	62.2	56.9	52.6
27Dec 13	12:00:00	3600	58.7	71.8	45.7	64.4	61.9	55.7	50.7

27Dec 13	13:00:00	3600	57.6	79.7	47.2	62.4	60.7	55.4	51.6
27Dec 13	14:00:00	3600	58	74.1	46.2	62.5	61	56	51.3
27Dec 13	15:00:00	3600	57.7	83.3	46.2	61.7	60.2	55.7	51.1
27Dec 13	16:00:00	3600	53.8	72.9	44.4	58.2	56.7	51.4	47.3
27Dec 13	17:00:00	3600	57.1	72.7	44.7	62.7	60.3	54.1	49.2
27Dec 13	18:00:00	3600	53.5	68.5	42.6	58.5	56.8	51.3	46.1
27Dec 13	19:00:00	3600	50	67.3	41.5	55.2	53.5	47.6	44.5
27Dec 13	20:00:00	3600	50.1	72.5	40	55.5	53.6	46.4	43.4
27Dec 13	21:00:00	3600	47.8	66	39.4	53.4	51	44.2	42
27Dec 13	22:00:00	3600	47.5	69.2	38.8	52.7	49.9	43.1	41.1
27Dec 13	23:00:00	3600	46.7	64.9	39.9	51.9	49.6	43.9	41.8
28Dec 13	00:00:00	3600	45.1	68.1	38.8	49.8	47.5	42.6	40.7
28Dec 13	01:00:00	3600	44.1	66.3	37.4	48.7	46.6	42.1	40.1
28Dec 13	02:00:00	3600	40.9	60.6	35.9	42.7	41.7	39.6	38
28Dec 13	03:00:00	3600	40.5	61.6	35.4	42.7	41.7	39.5	38
28Dec 13	04:00:00	3600	40.9	62.5	35.5	42.7	41.6	39.3	37.6
28Dec 13	05:00:00	3600	42	64.5	35.6	45.4	43.4	39.8	38
28Dec 13	06:00:00	3600	44.1	64.6	36.8	48	44.9	41.7	39.5
28Dec 13	07:00:00	3600	47.1	71	37.8	51.9	48.6	41.9	40.2
28Dec 13	08:00:00	3600	48.8	77.3	38.7	54	50.4	43	41.1
28Dec 13	09:00:00	3600	51.1	80.7	39.3	53.5	51.3	43.8	41.5
28Dec 13	10:00:00	3600	47.1	75.5	40	52	49.9	44.2	42.3
28Dec 13	11:00:00	3600	47.8	68.5	40.6	52.9	51	44.3	42.4
28Dec 13	12:00:00	3600	48.6	71.4	41.2	53.5	52	46	43.3
28Dec 13	13:00:00	3600	48.3	76.5	40.4	53.1	51.6	45.9	42.8
28Dec 13	14:00:00	3600	48.1	65.9	40.8	52.9	51.3	45.5	43.1
28Dec 13	15:00:00	3600	49	82	41.2	53.6	51.4	45.2	43.1
28Dec 13	16:00:00	3600	47.5	70.1	41	52.7	50.8	44.6	42.6
28Dec 13	17:00:00	3600	47.8	66.9	41.1	53	51	44.5	42.7
28Dec 13	18:00:00	3600	46.5	65.1	40.6	51.6	49.3	43.8	42.3
28Dec 13	19:00:00	3600	47	63	40.2	52.6	50.5	44	42.4
28Dec 13	20:00:00	3600	46.5	65.2	40.6	51.6	49	43.8	42.2
28Dec 13	21:00:00	3600	45.7	70.1	39.7	50.4	47.3	42.8	41.3
28Dec 13	22:00:00	3600	45.8	66.2	38.8	50.6	46.7	42.1	40.6
28Dec 13	23:00:00	3600	43.9	69.1	38.2	47.5	44.9	41.6	40.2
29Dec 13	00:00:00	3600	43.4	65	37.7	45.9	44.3	41.8	40.3
29Dec 13	01:00:00	3600	43.7	65.7	37.7	48	46	42.1	40.2
29Dec 13	02:00:00	3600	43	61.2	37.6	46.7	45	41.5	39.6
29Dec 13	03:00:00	3600	43.5	72.8	36.2	45.6	43.8	40.9	39.1
29Dec 13	04:00:00	3600	42.9	66.5	36.3	46.2	44.7	41.3	39.2
29Dec 13	05:00:00	3600	40.4	63.2	34.8	43.2	41.5	38.7	37.1
29Dec 13	06:00:00	3600	41.3	65.5	34.1	43.2	40.5	38	36.3
29Dec 13	07:00:00	3600	44	71.3	35.1	49.5	45.3	39.4	37.5
29Dec 13	08:00:00	3600	50.5	84.4	37.4	50.7	47.7	41.9	39.5

29Dec 13	09:00:00	3600	51.2	82.5	37.1	49.7	46.7	41.7	39.7
29Dec 13	10:00:00	3600	51.6	80.8	38.1	52.5	49.4	42.7	40.3
29Dec 13	11:00:00	3600	48.6	71.3	39.2	53.2	50.1	42.8	40.9
29Dec 13	12:00:00	3600	52.2	81.5	40.4	52.8	49.9	43.9	42.1
29Dec 13	13:00:00	3600	48.8	74.6	40.9	53.8	51.5	45.2	43
29Dec 13	14:00:00	3600	48.3	74.7	40.9	52.6	50.8	45.4	43.3
29Dec 13	15:00:00	3600	49.7	72.5	41.7	53.7	51.6	46	44.1
29Dec 13	16:00:00	3600	51.6	73.8	43.7	56	53.7	47.8	45.7
29Dec 13	17:00:00	3600	48.2	65.9	42.5	52.4	50.4	46.3	44.5
29Dec 13	18:00:00	3600	48.5	61.7	43	53.2	51.2	46.6	44.9
29Dec 13	19:00:00	3600	49.9	62.8	42.9	55.1	53.4	47.2	45
29Dec 13	20:00:00	3600	49.2	66.5	42.6	54.5	52.8	46.9	44.3
29Dec 13	21:00:00	3600	51.1	66.4	43.8	55.8	54.1	49.2	46.1
29Dec 13	22:00:00	3600	50.3	66.2	43.2	55.1	53.4	48.2	45.4
29Dec 13	23:00:00	3600	51.1	65.8	43	55.8	54.2	48.8	45.8
30Dec 13	00:00:00	3600	51.9	66.4	42.3	56.7	55.2	49.8	46.4
30Dec 13	01:00:00	3600	50.6	66.2	40.9	55.5	53.8	48.4	45
30Dec 13	02:00:00	3600	49.4	67.8	40.1	54.3	52.7	47.2	43.7
30Dec 13	03:00:00	3600	50.2	70.4	41.3	54.8	53.2	48.2	45
30Dec 13	04:00:00	3600	55.3	68.7	43.3	60.1	59	53.2	48.7
30Dec 13	05:00:00	3600	56.3	69.2	47	59.6	58.7	55.6	52.7
30Dec 13	06:00:00	3600	55.7	69.9	46.3	59.4	58.3	54.7	51.6
30Dec 13	07:00:00	3600	54.6	73	43.7	58.6	57.3	53	48.9
30Dec 13	08:00:00	3600	54.4	69.2	43.5	58.7	57.5	53	48.6
30Dec 13	09:00:00	3600	50.7	66	41.5	55.8	54.3	48.1	44.3
30Dec 13	10:00:00	3600	50.3	67	42.1	54.7	53.3	47.7	44.7
30Dec 13	11:00:00	3600	49.8	66.2	41.8	54.6	53.1	47.2	44.4
30Dec 13	12:00:00	3600	49.9	66	41.8	55.2	53.4	46.5	43.7
30Dec 13	13:00:00	3600	49.1	66.1	40.3	54.6	52.7	45.9	42.8
30Dec 13	14:00:00	3600	49.5	70.7	40.5	54.3	52	44.8	42.5
30Dec 13	15:00:00	3600	48.3	67.6	40.5	53.7	51.9	44.7	42.3
30Dec 13	16:00:00	3600	47.6	69.2	41.1	52.7	51	44.5	42.6
30Dec 13	17:00:00	3600	51.5	75.2	41.3	55.9	52.5	45	43.3
30Dec 13	18:00:00	3600	47.8	62.4	42.8	52.8	50.8	45.6	44.2
30Dec 13	19:00:00	3600	48.7	64.3	42.7	53.7	51.5	45.7	44.2
30Dec 13	20:00:00	3600	48.1	63	43.2	52.6	50.6	46.6	45.1
30Dec 13	21:00:00	3600	47.8	62.1	44.1	51.4	49.5	46.7	45.4
30Dec 13	22:00:00	3600	47.7	66.5	43.3	50.8	49	46.5	45.1
30Dec 13	23:00:00	3600	47.1	62.1	42.9	50.6	48.7	46	44.6
31Dec 13	00:00:00	3600	46.1	59.7	42	49	47.5	45.3	44.1
31Dec 13	01:00:00	3600	45.7	57.9	40.9	48.8	47.4	44.7	43.2
31Dec 13	02:00:00	3600	43.5	62.1	38.1	46.5	45	42.2	40.3
31Dec 13	03:00:00	3600	43.6	61.2	38.1	47.5	45.6	41.7	39.9
31Dec 13	04:00:00	3600	49.1	66.4	39.1	54.9	53.1	45.4	41.6

Report N&V Stn 3 Church of Ireland Building Grangegorman 9 Dec to 9 Jan 2014 EM

31Dec 13	05:00:00	3600	55.8	69.3	46.5	60	58.7	54.3	50.8
31Dec 13	06:00:00	3600	50.6	67.7	39.2	55.7	54.3	48.1	42.4
31Dec 13	07:00:00	3600	52.3	75	39.1	59	57.1	45.6	42.8
31Dec 13	08:00:00	3600	56	82.7	42.2	59	57.9	53.9	47.7
31Dec 13	09:00:00	3600	51.3	75	41.7	56.7	54.2	46.4	44
31Dec 13	10:00:00	3600	48.7	67.6	41.7	53.5	51.7	45.8	43.5
31Dec 13	11:00:00	3600	50.3	79.4	41	54.1	52.5	45.9	43.6
31Dec 13	12:00:00	3600	50.2	79	42.7	54.7	52.9	47.2	45.1
31Dec 13	13:00:00	3600	56	70.6	44.1	61	59.2	53.8	48.1
31Dec 13	14:00:00	3600	52.5	70.2	43.2	57.5	56	49.8	45.7
31Dec 13	15:00:00	3600	49.4	64.6	42.4	54.4	52.9	46.8	44.5
31Dec 13	16:00:00	3600	48.7	70.2	41.8	53.8	52	45.7	43.8
31Dec 13	17:00:00	3600	47.2	62.8	39.7	52.8	50.7	44.3	42.2
31Dec 13	18:00:00	3600	46.1	63.3	40	51.9	49.2	43.4	42
31Dec 13	19:00:00	3600	48.2	64.9	41.7	54.1	51.6	44.8	43.3
31Dec 13	20:00:00	3600	47.6	73.8	41.5	52.9	50.2	44.7	43.2
31Dec 13	21:00:00	3600	47.9	73.2	42.4	52.7	50.4	45.9	44.3
31Dec 13	22:00:00	3600	48	69.3	42.5	51.3	48.8	45.7	44.2
31Dec 13	23:00:00	3600	51.5	77.9	40.8	56.1	54	47.2	44.2
01Jan 14	00:00:00	3600	51.6	79.8	40.8	57.1	54.5	45.8	43.2
01Jan 14	01:00:00	3600	45	69.5	39.6	49	46.7	43.3	41.8
01Jan 14	02:00:00	3600	44.9	62.5	39.8	49.5	46.5	42.7	41.3
01Jan 14	03:00:00	3600	44.5	62.4	41	45.9	45	43.6	42.5
01Jan 14	04:00:00	3600	45	63.3	40.3	48.5	45.9	43.7	42.1
01Jan 14	05:00:00	3600	45.4	64.1	39.7	48.6	46.9	44.4	43
01Jan 14	06:00:00	3600	45.1	65.8	39.4	47.7	46.4	43.9	42.2
01Jan 14	07:00:00	3600	45.4	61.8	39.3	48.6	46.8	44.1	42.3
01Jan 14	08:00:00	3600	51.9	67.6	42	57.1	55.8	48.8	44.5
01Jan 14	09:00:00	3600	57.6	70.9	47.7	61.6	60.4	56.4	52.1
01Jan 14	10:00:00	3600	58.2	80.8	48.8	61.7	60.6	57.1	53.8
01Jan 14	11:00:00	3600	56.9	71.1	46.6	61.4	59.8	55	51
01Jan 14	12:00:00	3600	48.5	62.6	41.3	53.4	51.6	46.6	43.2
01Jan 14	13:00:00	3600	47.3	64.8	40.8	52.4	50.4	45.1	42.9
01Jan 14	14:00:00	3600	48.2	72.5	40.4	53.2	51.4	45.7	43.3
01Jan 14	15:00:00	3600	47.6	64.2	40.5	52.8	50.9	45	42.7
01Jan 14	16:00:00	3600	49.3	63.2	40.7	54.8	52.8	46.8	43.4
01Jan 14	17:00:00	3600	51.2	71.3	40.9	56.5	54.8	48.6	44.3
01Jan 14	18:00:00	3600	48.2	69.4	39	53.8	50.6	43.5	41.3
01Jan 14	19:00:00	3600	46.6	66	39.3	51.6	48.8	43.5	41.3
01Jan 14	20:00:00	3600	47.4	68.6	38.6	53	50.3	43.6	41.1
01Jan 14	21:00:00	3600	44	65.6	37.8	48.3	45.4	41.5	39.7
01Jan 14	22:00:00	3600	44.2	67.7	37.5	48	45	41	39.3
01Jan 14	23:00:00	3600	43.3	67.9	36.8	47	44.5	40.6	39
02Jan 14	00:00:00	3600	42.1	63.7	36.6	44.9	43.4	40.1	38.4

02Jan 14	01:00:00	3600	42.5	77.2	35.4	44.8	43.4	39.8	37.8
02Jan 14	02:00:00	3600	43.3	73.7	33.8	46.3	44.5	39.2	36.5
02Jan 14	03:00:00	3600	42	71.2	32.3	46.4	43.2	37.2	34.8
02Jan 14	04:00:00	3600	39.3	63.4	32.5	43	40.6	36.9	35.1
02Jan 14	05:00:00	3600	44.8	61.9	35	49.8	47.7	42.1	38
02Jan 14	06:00:00	3600	46.7	66.5	39.4	50.9	48.7	44.5	42.2
02Jan 14	07:00:00	3600	63.5	81.5	42.3	69.4	67	60.3	44.7
02Jan 14	08:00:00	3600	72.3	80.7	61.3	73.2	72.9	72.5	72
02Jan 14	09:00:00	3600	71.4	86.8	46.7	74.8	73.7	72.1	53
02Jan 14	10:00:00	3600	59.3	77.3	46.2	61.9	60.8	58.5	48.8
02Jan 14	11:00:00	3600	63.7	81.8	51.1	69	66.3	61.2	57.4
02Jan 14	12:00:00	3600	61.1	75.5	56.1	63.9	62.6	60.8	58.3
02Jan 14	13:00:00	3600	59.2	72.4	53.1	62.9	61.2	57.9	57
02Jan 14	14:00:00	3600	64.5	84.2	55.1	68	66.4	63.1	60.1
02Jan 14	15:00:00	3600	66.2	83.4	52.5	70.6	68.9	63.9	60.5
02Jan 14	16:00:00	3600	64.2	86.2	46.5	68	66.6	63	52.2
02Jan 14	17:00:00	3600	50	68.2	43.4	54.5	52.9	47.9	45.5
02Jan 14	18:00:00	3600	48.7	63.6	42.7	53.4	51.7	46.8	44.7
02Jan 14	19:00:00	3600	49.4	67.1	43	53.9	51.9	47	44.8
02Jan 14	20:00:00	3600	50.4	66.9	43.1	54.8	53.4	49	45.8
02Jan 14	21:00:00	3600	48.7	64.6	42.1	53.1	51.6	46.8	44.2
02Jan 14	22:00:00	3600	48.9	63.8	40.9	54.2	51.6	45.8	43.5
02Jan 14	23:00:00	3600	55.8	71.9	43.1	61.5	59.6	52.4	46.8
03Jan 14	00:00:00	3600	51.8	66.9	40.1	57.9	55.4	47.7	43.2
03Jan 14	01:00:00	3600	55.3	86.4	41.5	59.8	57.8	51.2	45.7
03Jan 14	02:00:00	3600	56.2	75.5	42	62.2	59.8	52.2	46.2
03Jan 14	03:00:00	3600	51.1	66.6	39.4	56.5	54.6	48	43.9
03Jan 14	04:00:00	3600	53.4	68.8	40.4	59.1	57.1	49.7	44.4
03Jan 14	05:00:00	3600	56.1	74.8	41.4	61.9	59.4	52	46.4
03Jan 14	06:00:00	3600	57.6	72.1	44	63.5	61	53.6	48.7
03Jan 14	07:00:00	3600	66.2	92.2	46.6	70.4	68.4	61.4	52.5
03Jan 14	08:00:00	3600	65	82.6	54.2	69	67.8	63.4	60.1
03Jan 14	09:00:00	3600	63.2	77.5	48.3	67.7	66.2	61.3	59.3
03Jan 14	10:00:00	3600	63	81.1	47	68.2	66.9	60.6	52
03Jan 14	11:00:00	3600	65.6	81.8	56.5	69.6	68.4	63.8	59.7
03Jan 14	12:00:00	3600	65.8	89.4	50.8	70.1	68.4	63.9	59.3
03Jan 14	13:00:00	3600	61.6	78.6	45.2	67.6	65.8	55.8	49.1
03Jan 14	14:00:00	1766.1	62.9	84.6	52.7	67.2	65.9	61.3	57.3
03Jan 14	14:38:22	1297.2	62.7	80.1	51.5	66.7	65.6	61.5	55
03Jan 14	15:00:00	3600	64.2	85.7	53.7	68.6	67	62.5	57.9
03Jan 14	16:00:00	3600	62.4	91.5	47.5	66.5	64.7	57.3	52.6
03Jan 14	17:00:00	3600	51.1	68.7	45.4	55.1	53.7	49.5	47.2
03Jan 14	18:00:00	3600	50.8	64.1	44.1	55.3	53.9	48.9	46.3
03Jan 14	19:00:00	3600	53.3	66.6	44.1	58.3	56.8	51.1	47

03Jan 14	20:00:00	3600	55	71.2	43.9	60.6	58.5	52.3	47.7
03Jan 14	21:00:00	3600	53.7	67.8	42.7	58.8	56.9	51.2	47.1
03Jan 14	22:00:00	3600	53.3	73.9	40.3	58.9	56.9	49.4	43.9
03Jan 14	23:00:00	3600	45.9	67.7	38.7	50.7	48.4	43.3	40.9
04Jan 14	00:00:00	3600	43.9	63.5	38.8	48	45.9	41.9	40.3
04Jan 14	01:00:00	3600	42.3	59.3	38.2	45.3	43.4	41.2	39.8
04Jan 14	02:00:00	3600	41	59.2	36.5	42.7	41.9	40.3	39
04Jan 14	03:00:00	3600	42	64.7	34.3	44.3	42	38.5	36.5
04Jan 14	04:00:00	3600	42.2	63.5	34.4	47	45.4	39.4	36.6
04Jan 14	05:00:00	3600	58.2	74.8	39.8	61.8	61	58.1	49
04Jan 14	06:00:00	3600	45.2	64	32.2	51.5	48.4	39.9	36.3
04Jan 14	07:00:00	3600	46.4	66	35.2	52.9	50	40.7	38.1
04Jan 14	08:00:00	3600	48.2	80.3	37.4	53	50.6	43.6	40.5
04Jan 14	09:00:00	3600	48.7	73.8	39.8	53.7	51.3	44.5	42.1
04Jan 14	10:00:00	3600	48.8	80.2	38	53.1	51.2	44	41
04Jan 14	11:00:00	3600	48.9	82.3	37	52.9	51.2	42.9	39.6
04Jan 14	12:00:00	3600	47.5	65.5	36.4	53.6	51.8	43.1	39.3
04Jan 14	13:00:00	3600	47.6	68.8	36.9	53	50.9	42.7	39.9
04Jan 14	14:00:00	3600	46.6	64.8	37.8	52.4	50.4	42.6	40.2
04Jan 14	15:00:00	3600	48.8	72.9	38.1	53.9	51.8	42.8	40.2
04Jan 14	16:00:00	3600	47.4	64.5	38.6	53.5	51.1	43.1	41
04Jan 14	17:00:00	3600	47.7	66.4	39	53.8	50.9	42.4	40.3
04Jan 14	18:00:00	3600	46.6	64	39.4	52.2	50.1	43.2	41.2
04Jan 14	19:00:00	3600	46.2	64.8	40.3	51.5	48.9	43.5	41.8
04Jan 14	20:00:00	3600	47.4	66	39.9	52.6	50.7	44.4	41.8
04Jan 14	21:00:00	3600	45.7	65.3	39.2	50.7	48.5	43	41.1
04Jan 14	22:00:00	3600	44.2	67.6	37.9	48.4	45.3	41.7	40.2
04Jan 14	23:00:00	3600	55.6	76	38.5	62.1	54.9	41.9	40.2
05Jan 14	00:00:00	3600	42	65.7	37.7	43.4	41.9	40.2	39.1
05Jan 14	01:00:00	3600	41.6	59.1	36.6	43.5	41.4	39.9	39
05Jan 14	02:00:00	3600	40.5	61.4	35.8	41.7	41	39.5	38.1
05Jan 14	03:00:00	3600	41.9	63.2	36.2	44.8	42.7	39.9	38.4
05Jan 14	04:00:00	3600	40.1	63	36	41.7	41	39.3	38
05Jan 14	05:00:00	3600	40.4	63.3	34.5	43.9	42.1	38.7	37
05Jan 14	06:00:00	3600	44.2	61.4	38.2	47.9	46.5	42.6	40.5
05Jan 14	07:00:00	3600	46.8	65.1	40.9	50.8	47.9	44.3	43
05Jan 14	08:00:00	3600	47.6	67.8	40.5	51.9	49.2	44.7	42.7
05Jan 14	09:00:00	3600	49.6	78.6	41.3	52.5	50.2	45.9	43.9
05Jan 14	10:00:00	3600	52.4	84.2	42.1	53.7	52	46.9	44.6
05Jan 14	11:00:00	3600	52.5	81.8	43.1	53.9	51.9	47.8	45.7
05Jan 14	12:00:00	3600	53	74.1	44.7	57.9	56	50.4	47.2
05Jan 14	13:00:00	3600	51.5	72.9	43.8	56.3	54.1	49.4	46.5
05Jan 14	14:00:00	3600	48.9	76.4	42.1	53.5	51.4	46.4	44.1
05Jan 14	15:00:00	3600	48.5	75.1	42.2	53.5	51.1	45.8	44.1

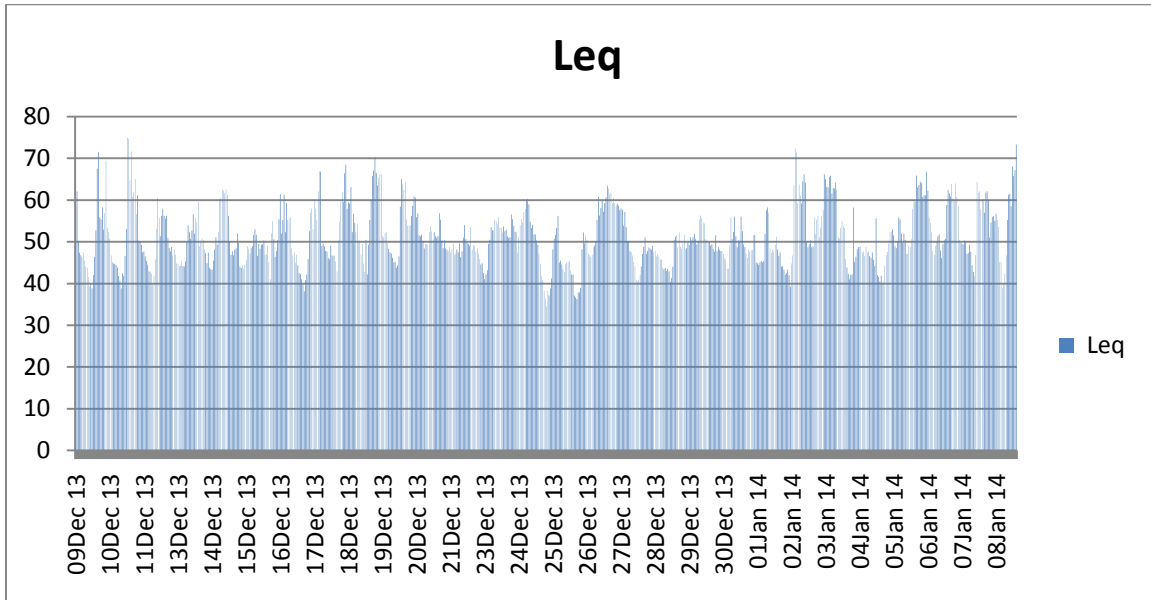
Report N&V Stn 3 Church of Ireland Building Grangegorman 9 Dec to 9 Jan 2014 EM

05Jan 14	16:00:00	3600	50	68.3	43.1	54.3	52.4	47.3	45.1
05Jan 14	17:00:00	3600	55.8	69.2	44.9	61.6	59.5	52.3	47.9
05Jan 14	18:00:00	3600	55.4	68.4	42	59.8	58.8	54.1	46.1
05Jan 14	19:00:00	3600	51.9	67.6	41.1	57.2	55.7	48.5	43.6
05Jan 14	20:00:00	3600	49.7	65.9	41.3	54.8	53	47	44.2
05Jan 14	21:00:00	3600	51.9	69.9	43	56.9	55.2	49.3	45.6
05Jan 14	22:00:00	3600	50.5	68	41.5	55.6	53.8	47.6	44.1
05Jan 14	23:00:00	3600	47.1	64	40.1	51.8	50.1	44.7	42.3
06Jan 14	00:00:00	3600	47.2	70	40.1	51.9	50.1	44.6	42.1
06Jan 14	01:00:00	3600	49.1	65.6	39.7	54	51.9	46.1	42.7
06Jan 14	02:00:00	3600	48.8	63.7	38	54.5	52.2	45.1	41.2
06Jan 14	03:00:00	3600	50.7	63.6	37.9	56.6	54.6	47.4	42.1
06Jan 14	04:00:00	3600	57.9	71.6	43.6	63.8	61.7	54.5	48.9
06Jan 14	05:00:00	3600	60	75.3	45.5	66	63.8	55.6	49.7
06Jan 14	06:00:00	3600	59.6	74.8	45.9	65.5	63.2	55.1	49.7
06Jan 14	07:00:00	3600	65.9	90.4	47.7	71.5	69.8	61.4	53.5
06Jan 14	08:00:00	3600	63	80.8	53	67.9	66.5	60.8	56.1
06Jan 14	09:00:00	3600	63.6	82.9	52.4	68.2	66.8	61.5	57.5
06Jan 14	10:00:00	3600	64.4	82.3	47.9	70.2	68.6	60.6	53.8
06Jan 14	11:00:00	3600	64	83.3	51.3	69.7	67.5	59.7	55
06Jan 14	12:00:00	3600	60.7	81.2	50.2	65.9	62.6	57.5	54.3
06Jan 14	13:00:00	3600	61.2	78	48.1	66.3	64	58.5	53.3
06Jan 14	14:00:00	3600	61.1	82.5	50.4	64.7	63.4	59.4	55.3
06Jan 14	15:00:00	3600	66.8	87.4	50.4	72.5	70.4	60.5	54.5
06Jan 14	16:00:00	3600	62.2	83.9	51.9	65.3	63	58.8	55.3
06Jan 14	17:00:00	3600	55.8	74.4	44.5	61	59.2	52.9	48
06Jan 14	18:00:00	3600	54.5	69	44.4	59.8	57.7	51.6	47.4
06Jan 14	19:00:00	3600	52.2	67.3	43.4	57.2	55	49.4	45.6
06Jan 14	20:00:00	3600	47.8	63.5	40.5	52.8	50.9	45.7	43.1
06Jan 14	21:00:00	3600	46.9	65.2	40.5	51.7	49.8	44.8	42.7
06Jan 14	22:00:00	3600	49	61.7	41	54.3	52.2	46.6	43.6
06Jan 14	23:00:00	3600	50.1	67.3	40	55.7	53	46	42.5
07Jan 14	00:00:00	3600	51.3	66.4	40.4	57	55.2	48.3	43.9
07Jan 14	01:00:00	3600	51.8	67.5	40.3	57.5	55.3	48.2	44.1
07Jan 14	02:00:00	3600	47.9	62.9	36.2	53.6	51.2	44.8	40.9
07Jan 14	03:00:00	3600	46.1	64.1	36.1	51.5	49.5	42.9	39.2
07Jan 14	04:00:00	3600	49.4	64.7	37.9	54.9	52.9	45.7	41.4
07Jan 14	05:00:00	3600	50.4	67.4	40.1	55.5	53.7	47.5	43.6
07Jan 14	06:00:00	3600	50.7	65.6	41.1	55.5	53.9	48.4	45.1
07Jan 14	07:00:00	3600	58.8	79.6	45.2	64.1	61.4	54.5	49.5
07Jan 14	08:00:00	3600	62.4	80.3	51.4	67.7	64.2	58.8	55.3
07Jan 14	09:00:00	3600	61.5	85.4	49.5	65.8	63.6	59.3	55
07Jan 14	10:00:00	3600	60.9	79.4	45	68.1	65.4	54.8	48.1
07Jan 14	11:00:00	3600	63.9	82.7	51.3	68.8	67.3	60.7	56

07Jan 14	12:00:00	3600	60.5	82.3	46.8	65	63.1	58.5	53.1
07Jan 14	13:00:00	3600	60.1	79.5	46.7	67.3	62.9	53.3	49
07Jan 14	14:00:00	3600	64	86.5	49.4	69.4	67.7	59.8	54.8
07Jan 14	15:00:00	3600	60.7	78.2	49.2	65.6	63.6	57.9	53.3
07Jan 14	16:00:00	3600	58.4	75.8	46.7	63.8	62.1	55.3	51
07Jan 14	17:00:00	3600	50.5	67.1	42.7	55.3	53.8	48	45.3
07Jan 14	18:00:00	3600	49.9	68.9	43.1	54.5	52.8	47.2	45
07Jan 14	19:00:00	3600	49.6	68.9	42.4	54.4	52.5	46.9	44.4
07Jan 14	20:00:00	3600	49.4	66.1	42.2	54.2	52.7	46.8	44.1
07Jan 14	21:00:00	3600	50.3	65.4	42.5	55.1	53.4	48.2	45
07Jan 14	22:00:00	3600	50.1	67.6	42.5	55	53.1	47.9	44.8
07Jan 14	23:00:00	3600	47.1	64.1	39.6	51.7	49.9	45.2	42.6
08Jan 14	00:00:00	3600	47.3	63.4	37.8	52.8	50.9	44.5	41.2
08Jan 14	01:00:00	3600	49.3	62.9	38.4	55	52.8	46.2	41.6
08Jan 14	02:00:00	3600	47.6	62.1	36.9	53.1	51	44.6	40.6
08Jan 14	03:00:00	3600	44.3	60.6	34.7	49.3	47.4	41.6	37.8
08Jan 14	04:00:00	3600	42.7	65.2	33.4	47.1	44.9	39.5	36.8
08Jan 14	05:00:00	3600	41.7	61.3	34.7	45.4	43.4	39.7	37.4
08Jan 14	06:00:00	3600	46.9	67.3	38.5	51.7	49	43.3	40.7
08Jan 14	07:00:00	3600	64.3	85.1	41.5	70.6	68.9	56.1	43.6
08Jan 14	08:00:00	3600	61.7	78.4	49.1	67.8	65.6	57.1	53.2
08Jan 14	09:00:00	3600	62.1	80.4	46.7	67.8	65	58.9	52.4
08Jan 14	10:00:00	3600	57.8	79.8	45.3	63	60.5	53	48.1
08Jan 14	11:00:00	3600	60.1	76.4	48.2	65	62.8	57.1	52.8
08Jan 14	12:00:00	3600	60.3	77.1	47.2	65.3	63.1	56.7	52.3
08Jan 14	13:00:00	3600	57	77.9	47	62.7	61	52.5	48.4
08Jan 14	14:00:00	3600	61.7	79.1	53.4	65.9	64.1	60.1	56.7
08Jan 14	15:00:00	3600	62.1	81	52	66.8	64.8	59.5	56.2
08Jan 14	16:00:00	3600	60	79.6	48.5	65.3	63.7	56.4	52.4
08Jan 14	17:00:00	3600	51	63.2	43	55.5	54	49.5	45.7
08Jan 14	18:00:00	3600	54.6	68.7	42.7	58.7	57.8	53.8	46.7
08Jan 14	19:00:00	3600	56	72.4	43.7	59.9	58.9	54.9	50.1
08Jan 14	20:00:00	3600	56.1	68.5	44.5	59.7	58.8	55.3	50.9
08Jan 14	21:00:00	3600	55	66.6	43.7	58.5	57.7	54.3	50.4
08Jan 14	22:00:00	3600	56.7	71.9	45.8	60	59.2	56.1	51.8
08Jan 14	23:00:00	3600	55.3	68.5	44.7	58.8	57.9	54.6	50.7
09Jan 14	00:00:00	3600	53.5	66.7	41.2	57.7	56.6	52.2	47.4
09Jan 14	01:00:00	3600	45.2	63.5	33.9	51.7	48.7	39.7	37.4
09Jan 14	02:00:00	3600	45.2	62.7	31.3	48.9	47.9	44.7	35.5
09Jan 14	03:00:00	3600	38.9	65.2	32.3	40.7	39.4	36.7	34.6
09Jan 14	04:00:00	3600	39.9	62.8	33.3	42	40.4	37.8	36
09Jan 14	05:00:00	3600	42.3	62	35.5	45.7	43.4	40.3	37.9
09Jan 14	06:00:00	3600	46.7	64.6	39.1	51.7	49.2	44.2	41.8
09Jan 14	07:00:00	3600	55.2	71.2	42.9	59.7	58.5	54	46.1



09Jan 14	08:00:00	3600	61.3	81	50.3	65.6	63.4	58.3	54.1
09Jan 14	09:00:00	3600	61.5	79.3	47.8	66.1	63.9	57.8	53.4
09Jan 14	10:00:00	3600	58.5	80.9	46.5	64.1	60.1	54.1	48.4
09Jan 14	11:00:00	3600	68	91.6	53.4	73	71.3	65.4	58.6
09Jan 14	12:00:00	3600	65.7	92.3	52.5	70.4	68.6	61.6	55.6
09Jan 14	13:00:00	3600	67.2	89.9	46.5	72.7	71.5	62.3	50.1
09Jan 14	14:00:00	2238.6	73.3	92.4	57.8	78	76.7	71.7	60.1



**Report Noise and Vibration Stn.4 The Energy Building  
Grangegorman**

**for Roadbridge**

**Project: Site Infrastructure & Public Realm Works**

**Monitoring Period: 9 Dec 2013 to 9 Jan 2014**

<b>Revision</b>	<b>Prepared By</b>	<b>Date</b>	<b>Approved</b>	<b>Date</b>
<b>01</b>	<b>K. O'Brien</b>	<b>9 Jan 2014</b>	<b>MH</b>	<b>10 Jan 2014</b>

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## **Contents**

1.	Introduction.....	4
2.	Methodology .....	4
2.1	Vibration .....	4
2.2	Noise .....	4
3.	Results .....	5
3.1.1	Vibration : Located at the Energy Building, Grangegorman. ....	5
3.2.1	Noise : Located at the Energy Building, Grangegorman. ....	9

## **1. Introduction**

At the request of Roadbridge, our company Environmental Measurements has carried out noise and vibration monitoring at the Energy Building, Grangegorman, Dublin.

The purpose of the survey was to:

1. Measure the noise and vibration levels impacting on the Energy Building while Roadbridge carried out works as part of the Grangegorman redevelopment.

## **2. Methodology**

### **2.1 Vibration**

One Instantel Model MiniMate Plus vibration monitor was installed at the Energy Building.

This monitor is a triaxial velocity meter which measures peak particle velocity (ppv) in mm/sec together with the frequency at peak. This allows for the calculation of acceleration and displacement at peak.

A specification sheet for the Instantel Model Mini Mate Plus accompanies this report.

### **2.2 Noise**

One Larson Davis Model 812 noise monitor was installed at the Energy Building.

This monitor is an integrating sound level meter which measures the standard sound level parameters of Leq, Max, Min, Pk, UnwPk and Lns.

A specification sheet for the Larson Davis Model 812 accompanies this report.

### **3. Results**

#### **3.1.1 Vibration : Located at the Energy Building, Grangegorman.**

Monitoring covers the period from 9 Dec 2013 to 9 Jan 2014. A Peak Particle Velocity (PPV) of 9.78mm/sec was recorded during this monitoring run.

This level is below the level of vibration required to have potential for cosmetic damage.  
Ref: BS 7385 Part 2 1993 Evaluation and measurement for vibration in buildings.



## Event Report

**Histogram Start Time** 16:25:03 December 9, 2013  
**Histogram Finish Time** 15:44:40 December 16, 2013  
**Number of Intervals** 2007 at 5 minutes  
**Range** Geo :254 mm/s  
**Sample Rate** 1024sps  
**Job Number:** 1

**Serial Number** BE10439 V 10.60-8.17 MiniMate Plus  
**Battery Level** 7.0 Volts  
**Calibration** November 20, 2013 by Instantel  
**File Name** L439F3PH.LR0

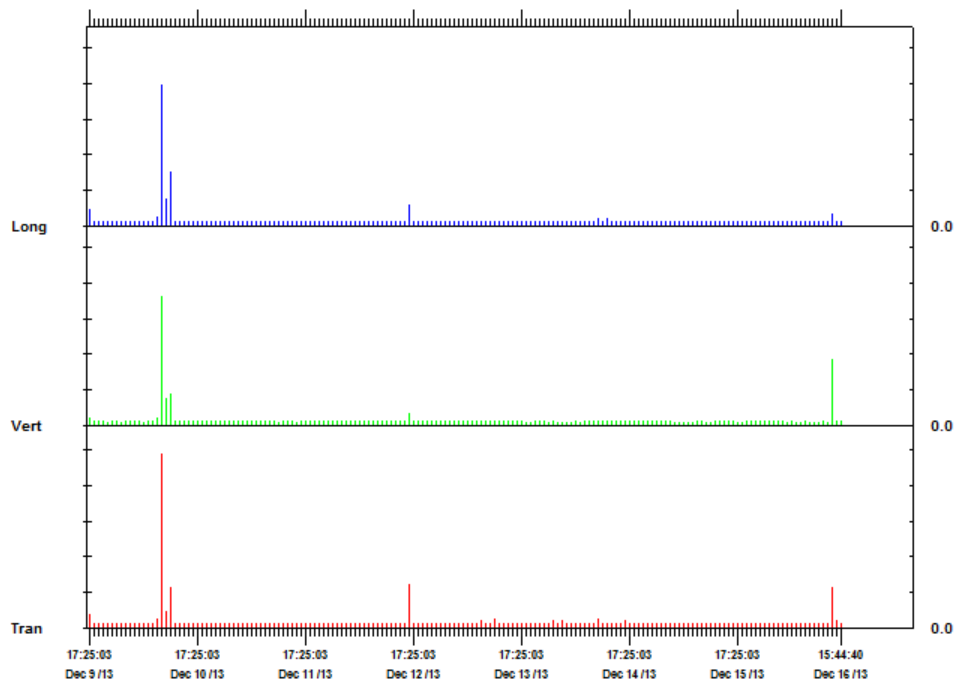
## Notes

## Post Event Notes

Client: Roadbridge  
 Location: The Energy Bdg, Grangegorman  
 User: Environmental Measurements

	Tran	Vert	Long	
PPV	9.78	7.24	7.87	mm/s
ZC Freq	47	57	43	Hz
Date	Dec 10 /13	Dec 10 /13	Dec 10 /13	
Time	09:20:03	09:20:03	09:25:03	
Sensorcheck	Passed	Passed	Passed	

Peak Vector Sum 10.6 mm/s on December 10, 2013 at 09:20:03



Time Scale: 1 hour /div Amplitude Scale: Geo: 2.00 mm/s/div

Printed: January 13, 2014 (V 8.12 - 8.12)

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## Event Report

<b>Histogram Start Time</b>	15:55:48 December 16, 2013	<b>Serial Number</b>	BE10439 V 10.60-8.17 MiniMate Plus
<b>Histogram Finish Time</b>	14:46:29 January 3, 2014	<b>Battery Level</b>	6.9 Volts
<b>Number of Intervals</b>	5170 at 5 minutes	<b>Calibration</b>	November 20, 2013 by Instantel
<b>Range</b>	Geo: 254 mm/s	<b>File Name</b>	L439F42E.X00
<b>Sample Rate</b>	1024sps		
<b>Job Number:</b>	1		

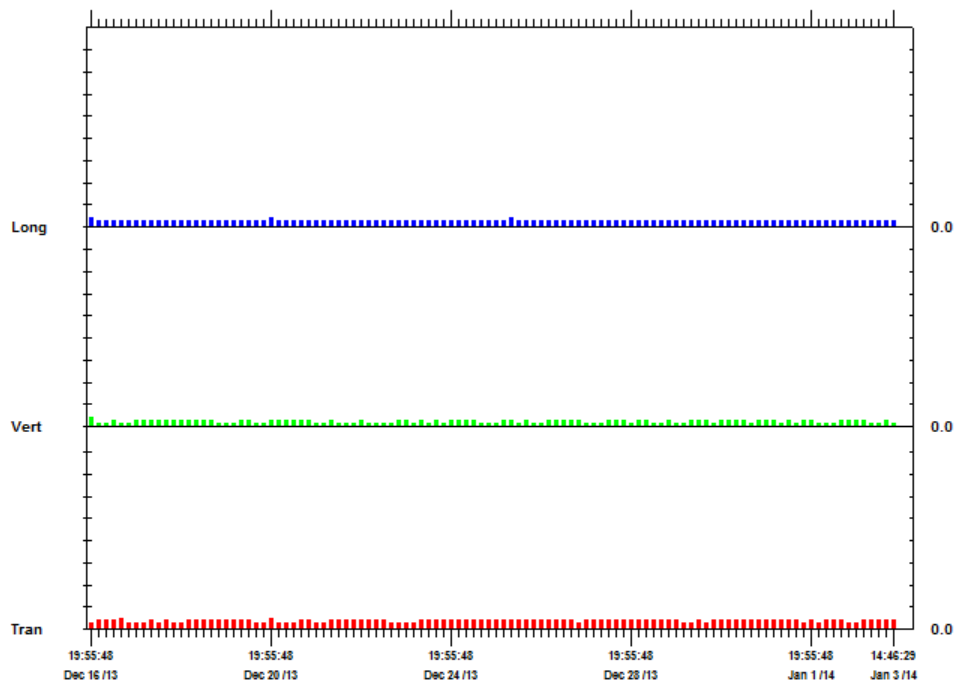
## Notes

## Post Event Notes

Client: Roadbridge  
 Location: The Energy Bldg, Grangegorman  
 User: Environmental Measurements

	Tran	Vert	Long	
PPV	0.508	0.381	0.381	mm/s
ZC Freq	27	85	47	Hz
Date	Dec 17 /13	Dec 16 /13	Dec 16 /13	
Time	09:50:48	16:00:48	16:00:48	
Sensorcheck	Passed	Passed	Passed	

**Peak Vector Sum** 0.582 mm/s on December 17, 2013 at 09:50:48



Time Scale: 4 hours /div Amplitude Scale: Geo: 1.000 mm/s/div

Printed: January 13, 2014 (V 8.12 - 8.12)

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## Event Report

**Histogram Start Time** 14:59:21 January 3, 2014  
**Histogram Finish Time** 14:53:25 January 9, 2014  
**Number of Intervals** 1728 at 5 minutes  
**Range** Geo: 254 mm/s  
**Sample Rate** 1024sps  
**Job Number:** 1

**Serial Number** BE10439 V 10.60-8.17 MiniMate Plus  
**Battery Level** 7.0 Volts  
**Calibration** November 20, 2013 by Instantel  
**File Name** L439F4ZO.AX0

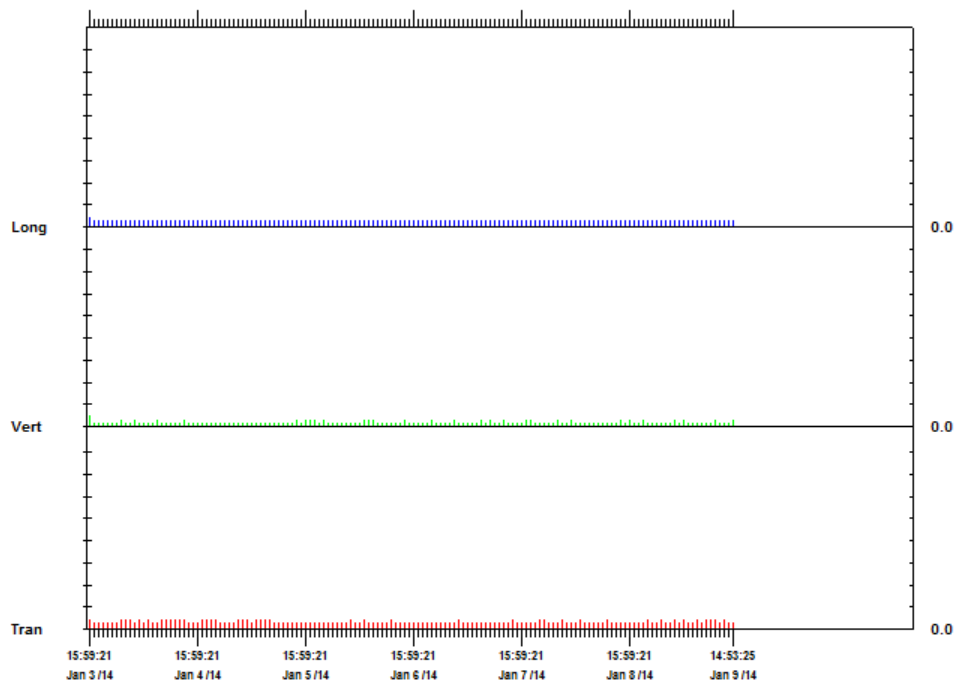
## Notes

## Post Event Notes

Client: Roadbridge  
 Location: The Energy Bldg, Grangegorman  
 User: Environmental Measurements

	Tran	Vert	Long	
PPV	0.381	0.508	0.381	mm/s
ZC Freq	57	85	>100	Hz
Date	Jan 3 /14	Jan 3 /14	Jan 3 /14	
Time	15:04:21	15:04:21	15:04:21	
Sensorcheck	Passed	Passed	Passed	

**Peak Vector Sum** 0.568 mm/s on January 3, 2014 at 15:04:21



Time Scale: 1 hour /div Amplitude Scale: Geo: 1.000 mm/s/div

Printed: January 13, 2014 (V 8.12 - 8.12)

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### 3.2.1 Noise : Located at the Energy Building, Grangegorman.

Monitoring covers the period from 9 Dec 2013 to 9 Jan 2014.

Date	Time	Duration	Leq	Lmax	Lmin	L( 5)	L(10)	L(90)	L(95)
09Dec 13	16:24:18	2141.6	66.1	91	46.1	72.2	68.7	50.5	48.3
09Dec 13	17:00:00	3600	46.8	65.7	42.1	48.9	47.8	44.1	43.6
09Dec 13	18:00:00	3600	46.3	63.8	41.8	48.4	47.1	43.8	43.3
09Dec 13	19:00:00	3600	46.7	61.2	42.8	49	48.2	44.7	44.3
09Dec 13	20:00:00	3600	46.7	61.5	43.2	48.8	47.8	45	44.6
09Dec 13	21:00:00	3600	47.8	63.3	43.8	50.9	49.2	45.5	45.2
09Dec 13	22:00:00	3600	45.4	53.6	41	47.9	47.4	42.7	42.3
09Dec 13	23:00:00	3600	43.6	53.7	40.5	45.7	45.1	42	41.5
10Dec 13	00:00:00	3600	44.2	56.2	40	46.6	45.9	42.1	41.7
10Dec 13	01:00:00	3600	44.8	58.2	39.5	47.9	46.7	41.9	41.4
10Dec 13	02:00:00	3600	42.4	52.8	37.1	45.2	44.3	40	39.4
10Dec 13	03:00:00	3600	42.3	57.8	38.1	45	43.9	40	39.5
10Dec 13	04:00:00	3600	42.2	61.7	36.7	44.9	43.8	39.4	39.1
10Dec 13	05:00:00	3600	44.4	63.5	39.3	46.9	45.8	41.6	41.2
10Dec 13	06:00:00	3600	47	62	41.5	50.4	49.2	43.7	43.2
10Dec 13	07:00:00	3600	55.5	77.1	45.5	60.4	58.6	48.5	47.9
10Dec 13	08:00:00	3600	67	83.7	52.1	74.2	70.7	55.3	54.4
10Dec 13	09:00:00	3600	78.3	104.9	48.1	80.6	75.7	51.7	51.1
10Dec 13	10:00:00	3600	66.7	88.6	46	75.1	70.7	47.7	47.3
10Dec 13	11:00:00	3600	62	83.3	48.1	67.8	62.7	50.3	49.8
10Dec 13	12:00:00	3600	53.9	75.1	48	57.7	55	50.1	49.7
10Dec 13	13:00:00	3600	53.2	75.4	46.5	55.4	53.1	48.5	48.2
10Dec 13	14:00:00	3600	58.2	72.5	47.5	66	62.9	49.7	49.2
10Dec 13	15:00:00	3600	54.5	78.6	48.4	58.3	56.5	50.2	50
10Dec 13	16:00:00	3600	52.6	78	47.5	55.4	54.3	49.8	49.3
10Dec 13	17:00:00	3600	49.5	68.3	45.3	51.7	50.8	47.2	47
10Dec 13	18:00:00	3600	53.8	80.4	45.9	54.7	52.9	48	47.4
10Dec 13	19:00:00	3600	47	58	40.6	49.3	48.7	44	43.3
10Dec 13	20:00:00	3600	45.1	58.8	40.5	47.7	46.8	43.1	42.5
10Dec 13	21:00:00	3600	46.2	58.3	42.8	48.6	47.8	44.3	44.1
10Dec 13	22:00:00	3600	46.1	66.1	42.1	48.8	47.7	44	43.5
10Dec 13	23:00:00	3600	47.4	60.6	43.1	50	49.2	45.1	44.6
11Dec 13	00:00:00	3600	46.4	59.2	42	48.7	47.9	44.3	44
11Dec 13	01:00:00	3600	44.5	60.6	40.1	47.3	46.4	42.1	41.5
11Dec 13	02:00:00	3600	52.9	84.4	39.2	50	46.6	41.4	41.1

11Dec 13	03:00:00	3600	51.2	75.8	37.4	45	42.6	39	38.5
11Dec 13	04:00:00	3600	42.8	60.5	38.5	45.4	44.3	40.4	40.1
11Dec 13	05:00:00	3600	45.5	81.3	40.1	44.7	44.2	41.4	41.2
11Dec 13	06:00:00	3600	47.1	58.7	42.2	49.4	48.9	44.2	43.7
11Dec 13	07:00:00	3600	56.8	85.5	45.4	56.3	53.6	47.1	46.5
11Dec 13	08:00:00	3600	54.5	75.1	48.4	57.7	56.1	50.5	50
11Dec 13	09:00:00	3600	51.9	73.9	46.7	54.9	53.7	48.6	48.2
11Dec 13	10:00:00	3600	52.2	75	44.5	56.4	54	46.4	46
11Dec 13	11:00:00	3600	53.2	75.2	45.6	57.6	55.4	48.6	48.2
11Dec 13	12:00:00	3600	54.4	69.4	50.3	57.2	56.1	52.1	51.6
11Dec 13	13:00:00	3600	53.6	70.4	48.2	56.7	55.6	50.5	50.1
11Dec 13	14:00:00	3600	54.1	71.3	47.7	57.5	56.4	50.5	50.1
11Dec 13	15:00:00	3600	57.7	75.7	48.3	62.8	61.5	51.1	50.5
11Dec 13	16:00:00	3600	57.9	74.3	48	62.6	61	50.6	49.7
11Dec 13	17:00:00	3600	50.3	65	46.7	53.1	51.9	48.2	48.1
11Dec 13	18:00:00	3600	50	61.2	47	52.6	51.6	48.2	48
11Dec 13	19:00:00	3600	51.6	72.1	46.8	54.7	53.7	48.6	48.2
11Dec 13	20:00:00	3600	49.5	68.2	45	52.9	51.6	46.7	46.3
11Dec 13	21:00:00	3600	48	58.3	43.8	50.8	49.6	45.9	45.4
11Dec 13	22:00:00	3600	46.1	56.2	43.1	48	47.5	44.5	44.2
11Dec 13	23:00:00	3600	46	64.9	42.3	47.9	47.2	44.2	44
12Dec 13	00:00:00	3600	45.6	58.8	40.5	49.5	48	42.3	42
12Dec 13	01:00:00	3600	42.8	54.2	39	44.9	44.3	41.1	40.6
12Dec 13	02:00:00	3600	42.1	54.1	38.9	43.9	43.4	40.7	40.3
12Dec 13	03:00:00	3600	42.4	51.5	39.7	44	43.6	41.2	41
12Dec 13	04:00:00	3600	43	51.9	39.8	45	44.6	41.3	41.1
12Dec 13	05:00:00	3600	46.6	68.9	41	50.4	48.5	43.2	42.8
12Dec 13	06:00:00	3600	47.9	62.4	42	51	49.6	45	44.3
12Dec 13	07:00:00	3600	53.4	78.6	47	56.9	55.3	49.7	49.1
12Dec 13	08:00:00	3600	57.9	76.9	49.9	62.1	60.7	52.4	51.8
12Dec 13	09:00:00	3600	65.5	92.7	52.6	69.2	67.5	56.8	55.5
12Dec 13	10:00:00	3600	56.4	77.3	48.2	60.8	59.3	50.4	49.8
12Dec 13	11:00:00	3600	58	74.9	48.5	63	61.1	51.1	50.4
12Dec 13	12:00:00	3600	56.2	71.7	48.7	59.9	58.5	52.1	51.2
12Dec 13	13:00:00	3600	57.3	76.2	47.4	63.8	61.5	49.3	48.9
12Dec 13	14:00:00	3600	56.6	74.4	48.1	61.8	59.9	50.6	49.8
12Dec 13	15:00:00	3600	65.8	98.5	47.8	69.3	66.1	51.1	50.3
12Dec 13	16:00:00	3600	63.6	94.2	48.4	67.5	64.8	53	51.8
12Dec 13	17:00:00	3600	50	64.1	44.7	53.8	52.3	47	46.4
12Dec 13	18:00:00	3600	48	67.4	43.7	50	48.9	45.3	45.1
12Dec 13	19:00:00	3600	47.8	65.2	44	49.7	48.8	46.1	45.6
12Dec 13	20:00:00	3600	47.2	61.3	44	49.3	48.5	45.5	45.2
12Dec 13	21:00:00	3600	46.8	67.9	42.2	48.8	47	44	43.5
12Dec 13	22:00:00	3600	46.4	66	42.8	47.4	46.7	44.1	43.9

12Dec 13	23:00:00	3600	45	58.4	41.3	47	46.5	43.1	42.8
13Dec 13	00:00:00	3600	44.1	60.8	41	46.4	45.5	42.3	42.1
13Dec 13	01:00:00	3600	43.6	51.4	40.1	45.9	45.3	41.7	41.4
13Dec 13	02:00:00	3600	45.1	53	41.5	47.5	46.7	43.2	42.9
13Dec 13	03:00:00	3600	50	84.7	41.3	54	51.5	43.2	42.8
13Dec 13	04:00:00	3600	48.5	63.5	41.8	53	51.4	44.3	43.7
13Dec 13	05:00:00	3600	46.7	62.4	41	50.2	48.8	43.7	43.2
13Dec 13	06:00:00	3600	47.8	68.7	42.1	50.6	49.3	45.2	44.7
13Dec 13	07:00:00	3600	51.1	69.5	44.5	54	52.7	47.6	47
13Dec 13	08:00:00	3600	60.5	87.3	47.4	63.9	62.3	49.4	49
13Dec 13	09:00:00	3600	58.5	83.3	47.6	63.7	61.8	49.9	49.4
13Dec 13	10:00:00	3600	61.8	98	47.4	64.3	59.6	49	48.5
13Dec 13	11:00:00	3600	53.8	74.6	47.7	57.8	55.5	49.9	49.4
13Dec 13	12:00:00	3600	59.7	83	47.7	66.1	61.4	50.1	49.6
13Dec 13	13:00:00	3600	60	89.6	45.9	64.5	62.1	48.5	48.1
13Dec 13	14:00:00	3600	57.7	81.7	47.4	63	59	49	48.5
13Dec 13	15:00:00	3600	59.8	79.3	48.4	65.1	63.4	53.2	51.7
13Dec 13	16:00:00	3600	53.1	73.3	47.4	55.8	53.9	49.2	49
13Dec 13	17:00:00	3600	50.8	62.6	47.6	52.8	52	49.2	49
13Dec 13	18:00:00	3600	51.8	67.6	47.7	54	52.8	49.4	49.1
13Dec 13	19:00:00	3600	53.2	74.8	47.7	56.3	54.6	50	49.5
13Dec 13	20:00:00	3600	52.7	68.8	47.8	55.8	54.3	50.1	49.6
13Dec 13	21:00:00	3600	51.6	65.5	46.5	54.3	53	49.1	48.6
13Dec 13	22:00:00	3600	50.4	63.8	46	52.8	51.8	48.1	47.6
13Dec 13	23:00:00	3600	48.7	60.3	45.3	50.8	50.1	47	46.5
14Dec 13	00:00:00	3600	51.3	74.1	44.9	56.1	51.8	46.6	46.2
14Dec 13	01:00:00	3600	48.8	59.9	45	50.8	50.1	47.1	46.8
14Dec 13	02:00:00	3600	47	53.9	43.6	48.8	48.5	45.5	45.2
14Dec 13	03:00:00	3600	46.9	54.8	42.7	49.4	48.6	45	44.4
14Dec 13	04:00:00	3600	48.1	66.6	44.2	50.3	49.5	46.2	45.9
14Dec 13	05:00:00	3600	52	72.1	44	56.4	54.4	47	46.3
14Dec 13	06:00:00	3600	53.5	75.4	43.5	57.8	55.9	47.3	46.4
14Dec 13	07:00:00	3600	52.6	72.8	45.3	56.7	54.9	47.5	47.1
14Dec 13	08:00:00	3600	52.5	70.6	45.6	57.5	55	47.7	47.2
14Dec 13	09:00:00	3600	62.5	84.2	48	68.3	65.2	52.4	51.5
14Dec 13	10:00:00	3600	64.5	86.2	51.2	70.5	68.1	55.2	54.3
14Dec 13	11:00:00	3600	66.1	86.7	52.9	71.8	70.1	57.3	56.5
14Dec 13	12:00:00	3600	63.3	85.3	52.1	69.3	66.8	55	54.3
14Dec 13	13:00:00	3600	64.9	82.8	53.2	70.7	68.6	55.8	55
14Dec 13	14:00:00	3600	65	87.8	53.4	70.5	68.4	56	55.3
14Dec 13	15:00:00	3600	64.9	84.6	52.7	70.5	68.3	56.9	56.2
14Dec 13	16:00:00	3600	58.7	75.6	50	63.8	61.4	52.8	52.2
14Dec 13	17:00:00	3600	52.2	67.8	47.9	54.6	53.7	49.8	49.3
14Dec 13	18:00:00	3600	49.9	59.7	46.6	51.9	51.3	48.2	48

14Dec 13	19:00:00	3600	50.2	64.4	46.8	51.8	50.9	48.2	48
14Dec 13	20:00:00	3600	51.5	62.9	47.9	53.6	52.9	49.7	49.3
14Dec 13	21:00:00	3600	52.4	66	46.4	55.6	54.4	50	49.3
14Dec 13	22:00:00	3600	52.4	70.3	47.3	55.6	54.2	49.5	49.1
14Dec 13	23:00:00	3600	53.4	72.2	47.2	56.8	55.1	50	49.4
15Dec 13	00:00:00	3600	51.5	73.4	45	54.5	53.2	48.1	47.4
15Dec 13	01:00:00	3600	49.7	57.7	45.7	51.7	51.1	47.9	47.4
15Dec 13	02:00:00	3600	49.9	58	45.2	52.1	51.5	48	47.5
15Dec 13	03:00:00	3600	49.3	57.4	44.4	51.8	51.1	47	46.4
15Dec 13	04:00:00	3600	45.6	57	41.2	48.5	47.7	43.2	42.8
15Dec 13	05:00:00	3600	46.5	65.3	41.8	49.5	48.4	44.1	43.5
15Dec 13	06:00:00	3600	47	64.3	41.6	50.6	49.1	43.8	43.3
15Dec 13	07:00:00	3600	46.6	63.4	41	49.7	48.6	44	43.4
15Dec 13	08:00:00	3600	45.7	57	41.7	48.7	47.8	43.2	42.8
15Dec 13	09:00:00	3600	48.7	76.9	42.9	49.3	47.7	44.4	44.1
15Dec 13	10:00:00	3600	47.8	58.2	43	50.4	49.7	44.9	44.4
15Dec 13	11:00:00	3600	50.7	80.3	45.6	53.9	52.1	47.3	47.1
15Dec 13	12:00:00	3600	54.3	71.1	47	58.5	56.7	49.4	48.9
15Dec 13	13:00:00	3600	56.7	76.4	48.6	61.5	59.1	51.3	50.9
15Dec 13	14:00:00	3600	54.7	73.1	47.8	59	57.3	50	49.5
15Dec 13	15:00:00	3600	49.7	62.5	46	52.2	50.9	47.4	47.2
15Dec 13	16:00:00	3600	50	65.5	46.1	52.6	51	47.6	47.2
15Dec 13	17:00:00	3600	50.7	64.6	47.8	52.8	51.8	49.1	48.9
15Dec 13	18:00:00	3600	51.8	70.1	47.4	55.3	53.6	49	48.5
15Dec 13	19:00:00	3600	52	69.1	47.3	54.9	53.6	49.4	49.1
15Dec 13	20:00:00	3600	55	75.5	47.3	59	57.1	49.9	49.2
15Dec 13	21:00:00	3600	50.8	66.9	45.8	53.7	52.6	48.2	47.7
15Dec 13	22:00:00	3600	50.6	64.3	45.9	53.9	52.7	48	47.5
15Dec 13	23:00:00	3600	52.2	70.3	45.9	55.7	54.3	48.6	48.1
16Dec 13	00:00:00	3600	48.5	62.5	43	51.3	50.4	45.8	45.2
16Dec 13	01:00:00	3600	45.7	54.7	41.2	47.9	47.3	43.5	43.1
16Dec 13	02:00:00	3600	46.7	58.6	40.7	50.6	49.6	42.8	42.3
16Dec 13	03:00:00	3600	48.3	56.5	42.5	51.3	50.5	45.4	44.7
16Dec 13	04:00:00	3600	47.2	57.5	42.5	49.7	49	45	44.5
16Dec 13	05:00:00	3600	47.1	54.7	43.1	49.6	48.8	45	44.5
16Dec 13	06:00:00	3600	51	64.4	45.2	54	52.9	47.6	47.1
16Dec 13	07:00:00	3600	52.7	75.8	48.8	55.3	54.2	50.6	50.2
16Dec 13	08:00:00	3600	55.9	82.2	49.3	58.4	55.8	50.9	50.4
16Dec 13	09:00:00	3600	63.7	76.8	48.9	70.2	69.1	50.4	50.2
16Dec 13	10:00:00	3600	53.9	71	48.4	58.5	57.4	50.1	49.7
16Dec 13	11:00:00	3600	58.1	74	49.3	63.5	61.4	51.4	50.9
16Dec 13	12:00:00	3600	59.4	85.2	50.3	64.5	61	54	53.4
16Dec 13	13:00:00	3600	56.2	69	52.5	58.5	57.5	54.4	54.1
16Dec 13	14:00:00	3600	59.5	92.6	49.1	58	56.6	50.8	50.4

16Dec 13	15:00:00	2679.1	58.4	75.7	49.9	63	59.5	53.5	51.9
16Dec 13	15:55:22	277.9	59	78.4	54.9	61.9	59.4	55.6	55.3
16Dec 13	16:00:00	3600	57.5	75	48.6	59.9	58.2	51.1	50.5
16Dec 13	17:00:00	3600	51	68.9	46.6	53	52.3	48.9	48.4
16Dec 13	18:00:00	3600	49.8	62.5	47	51.1	50.8	48.3	48.1
16Dec 13	19:00:00	3600	50.7	64.9	47.1	52.5	51.8	49	48.5
16Dec 13	20:00:00	3600	50.1	69.3	46.3	52.8	51.6	48	47.5
16Dec 13	21:00:00	3600	50.4	71.6	45.9	51.6	50.8	47.5	47.2
16Dec 13	22:00:00	3600	48.4	64.2	44.8	50.2	49.6	46.5	46.2
16Dec 13	23:00:00	3600	47.2	58.4	43	49.9	48.9	45.1	44.7
17Dec 13	00:00:00	3600	46.7	56.6	41.7	49	48.1	44.6	44.2
17Dec 13	01:00:00	3600	46.5	67.8	41.5	50	48.4	43.3	43
17Dec 13	02:00:00	3600	45.1	56.7	40.3	48.3	46.5	42.6	42.2
17Dec 13	03:00:00	3600	46	57.6	40.1	50.5	49	42.4	42.1
17Dec 13	04:00:00	3600	42.8	53.7	38.1	44.7	44.1	41	40.4
17Dec 13	05:00:00	3600	46.2	67.3	40.4	48.3	47.7	43.2	42.6
17Dec 13	06:00:00	3600	50.1	63.7	45.1	52.7	51.6	47.5	47.1
17Dec 13	07:00:00	3600	52.5	72.7	48	55.7	53.8	49.7	49.3
17Dec 13	08:00:00	3600	59	77.9	49.8	62.9	60.3	52.4	51.6
17Dec 13	09:00:00	3600	61.6	81.9	48	66.5	63.2	55.2	51
17Dec 13	10:00:00	3600	58.4	81.7	47.5	61.4	58.9	49.1	48.5
17Dec 13	11:00:00	3600	54.7	76.2	47.1	58.6	57	49.4	48.9
17Dec 13	12:00:00	3600	59.5	80.6	51.3	62.3	57.8	52.9	52.4
17Dec 13	13:00:00	3600	55	71.9	50.9	57.3	56.7	52.5	52.2
17Dec 13	14:00:00	3600	55.8	79.1	48.4	59.7	58	50.4	50
17Dec 13	15:00:00	3600	56.6	76.9	48.5	62	59.1	50.8	50.3
17Dec 13	16:00:00	3600	64.9	91	47.1	69.7	64	49.9	48.9
17Dec 13	17:00:00	3600	50.2	62.2	46.5	52.7	51.7	48.2	48
17Dec 13	18:00:00	3600	51.1	65.6	47.2	53.8	52.5	49	48.5
17Dec 13	19:00:00	3600	50	70	45.2	52.9	51.6	47.5	47.1
17Dec 13	20:00:00	3600	49.7	64.3	45.6	52.7	51.5	47.4	47.1
17Dec 13	21:00:00	3600	48.7	66.9	43.9	51.7	50.5	46.1	45.6
17Dec 13	22:00:00	3600	47.8	61	43.1	50.7	49.5	45.4	45.1
17Dec 13	23:00:00	3600	49	68.6	43.6	52.9	50.9	45.7	45.3
18Dec 13	00:00:00	3600	52.2	71.5	44.6	56.4	54.6	47.5	47.1
18Dec 13	01:00:00	3600	49.5	68.5	42.5	53.8	51.9	45.1	44.6
18Dec 13	02:00:00	3600	54.5	83.7	43.1	55.8	53.6	45.4	45
18Dec 13	03:00:00	3600	52.8	80.2	42.4	57.3	53.9	45.2	44.5
18Dec 13	04:00:00	3600	49.5	67.6	42.2	54	52.2	45.1	44.4
18Dec 13	05:00:00	3600	46.9	61.3	42.1	49.9	48.7	44.3	43.9
18Dec 13	06:00:00	3600	51.2	71.3	44.3	53.6	51	46.6	46.2
18Dec 13	07:00:00	3600	52.8	72.8	46.7	55.5	53.1	48.4	48.1
18Dec 13	08:00:00	3600	66	87.7	48.8	72.5	70.2	50.8	50.3
18Dec 13	09:00:00	3600	62.7	80.4	52.2	67.7	65.3	55	54.2

18Dec 13	10:00:00	3600	62.3	79.8	50.7	66.4	64.6	53.9	53.1
18Dec 13	11:00:00	3600	68.2	88.6	51.3	72.6	68.7	55.1	54.3
18Dec 13	12:00:00	3600	60.4	75.4	52.2	63.9	62.3	54.1	53.5
18Dec 13	13:00:00	3600	61	81.1	51.7	66.8	65.9	54.2	53.9
18Dec 13	14:00:00	3600	60.2	83.1	50.4	62	60.2	52.7	52.2
18Dec 13	15:00:00	3600	57.6	75.7	50.1	61.6	59.8	52.9	52.3
18Dec 13	16:00:00	3600	62.2	87.3	52.5	67.2	64.6	55.1	54.4
18Dec 13	17:00:00	3600	54.4	73	49.3	57.4	56	51.5	51.2
18Dec 13	18:00:00	3600	59	80	51.2	63.6	60.9	53.6	53
18Dec 13	19:00:00	3600	58.2	76.6	50.4	63	60.5	52.9	52.3
18Dec 13	20:00:00	3600	54.9	73.5	48.5	58.8	56.6	50.7	50.2
18Dec 13	21:00:00	3600	54.4	71.1	48.2	58.3	56.2	50.3	49.9
18Dec 13	22:00:00	3600	53.7	75.3	47.2	57.5	55.4	49.5	49.1
18Dec 13	23:00:00	3600	52.5	69.3	46.7	56	54.5	49	48.4
19Dec 13	00:00:00	3600	51.7	72.5	44.6	55.4	53.8	47.8	47.2
19Dec 13	01:00:00	3600	52.3	74.6	44.5	56	53.9	47	46.4
19Dec 13	02:00:00	3600	48.4	63.7	43.2	51.5	50.5	45.2	44.7
19Dec 13	03:00:00	3600	47.8	66.8	42.3	50.8	49.7	44.9	44.3
19Dec 13	04:00:00	3600	52.4	75.1	43.7	56.1	53.7	45.8	45.3
19Dec 13	05:00:00	3600	46.8	55.8	42.6	49.2	48.5	44.7	44.2
19Dec 13	06:00:00	3600	52.8	75.6	45.1	55.3	54.1	48	47.2
19Dec 13	07:00:00	3600	52.7	66.8	47.3	55.3	54.3	50.1	49.5
19Dec 13	08:00:00	3600	55	79.8	49.7	56.4	54.9	51.4	51.2
19Dec 13	09:00:00	3600	54.3	78.5	50.1	56	54.7	51.5	51.2
19Dec 13	10:00:00	3600	54	72.5	49.7	56.7	55.5	51.5	51.2
19Dec 13	11:00:00	3600	55	78.6	49.7	56.8	55.5	51.5	51.2
19Dec 13	12:00:00	3600	55	82.3	49.9	57.3	55.9	52	51.5
19Dec 13	13:00:00	3600	53.3	71.7	49	55.6	54.6	51.1	50.6
19Dec 13	14:00:00	3600	55.1	76.9	50.3	58.5	56.6	52.2	51.9
19Dec 13	15:00:00	3600	55.7	78.4	50.5	58	56.9	52.4	52.1
19Dec 13	16:00:00	3600	55.6	72	50.6	58.6	57.4	52.6	52.2
19Dec 13	17:00:00	3600	52.8	69.5	49.5	54.6	53.7	51	50.6
19Dec 13	18:00:00	3600	53.4	67.4	50	55.8	54.9	51.4	51.1
19Dec 13	19:00:00	3600	53.9	71.6	49.9	56.7	55.4	51.5	51.2
19Dec 13	20:00:00	3600	54.6	74.1	49.2	57.8	56.2	51.4	51.1
19Dec 13	21:00:00	3600	53	67.1	48.8	55.5	54.5	50.9	50.4
19Dec 13	22:00:00	3600	52.1	64.9	48.1	54.3	53.5	50.2	49.8
19Dec 13	23:00:00	3600	51.7	63.3	47.8	54	53.3	49.8	49.4
20Dec 13	00:00:00	3600	51.2	65.8	46.8	53.4	52.8	49.2	48.8
20Dec 13	01:00:00	3600	50.8	69.6	45.8	53.3	52.6	48.4	48
20Dec 13	02:00:00	3600	50.2	64.1	45.7	52.8	51.9	47.8	47.3
20Dec 13	03:00:00	3600	49.8	64.7	45.2	52.3	51.6	47.4	47
20Dec 13	04:00:00	3600	48.7	64.8	44.2	51.4	50.6	46.3	46
20Dec 13	05:00:00	3600	49.2	62.5	44.6	51.8	50.9	46.9	46.4

20Dec 13	06:00:00	3600	51.7	67.4	47	54	53.1	49.2	48.8
20Dec 13	07:00:00	3600	52.3	65.9	49.1	54	53.6	50.6	50.3
20Dec 13	08:00:00	3600	58.2	84.4	50.4	62.8	60.1	52.2	51.8
20Dec 13	09:00:00	3600	60.5	82.9	49.2	68	67.1	51.5	51.1
20Dec 13	10:00:00	3600	54.6	74.5	49.2	57.9	56.8	51.3	50.9
20Dec 13	11:00:00	3600	57.8	80.8	50.6	60.8	59.1	53	52.4
20Dec 13	12:00:00	3600	56.1	72.4	50	60.3	58.5	52.4	52
20Dec 13	13:00:00	3600	57.4	79.9	50	61.6	59.6	52.2	51.6
20Dec 13	14:00:00	3600	58.1	82.1	50.3	62	59.9	53.1	52.4
20Dec 13	15:00:00	3600	58.1	80.4	49.4	62.9	59.8	52.1	51.6
20Dec 13	16:00:00	3600	58.8	78.4	51.3	64.1	61.4	53.1	52.6
20Dec 13	17:00:00	3600	61.6	83.7	51.3	67.2	64.6	54.2	53.6
20Dec 13	18:00:00	3600	64.6	85.9	52.5	69.8	67.7	57.1	56.4
20Dec 13	19:00:00	3600	63.9	86.4	53.3	68.8	66.6	56.5	55.9
20Dec 13	20:00:00	3600	59.8	78.7	51.7	65	62.5	54.2	53.6
20Dec 13	21:00:00	3600	58.1	76.7	50.9	62.7	60.5	53.2	52.7
20Dec 13	22:00:00	3600	54.5	76.7	49	57.6	56.1	51.3	50.8
20Dec 13	23:00:00	3600	54	71.9	48.3	56.9	55.5	51.1	50.5
21Dec 13	00:00:00	3600	53.8	73.8	48.2	56.3	55	50.9	50.3
21Dec 13	01:00:00	3600	53.6	72.7	48	56.6	55.2	50.4	50
21Dec 13	02:00:00	3600	53.4	69.6	48	56.5	55.3	50.5	50.1
21Dec 13	03:00:00	3600	53.4	72.1	48	56.5	55.1	50.1	49.6
21Dec 13	04:00:00	3600	52.6	70	46.4	56.3	54.7	49.1	48.5
21Dec 13	05:00:00	3600	52	69	45	56.1	54.6	47.6	47.1
21Dec 13	06:00:00	3600	56.7	78.8	45.3	61.3	58.6	48.5	47.9
21Dec 13	07:00:00	3600	57.6	76.4	48.6	62.6	59.9	51.3	50.7
21Dec 13	08:00:00	3600	55.4	73.5	48	59.5	57.2	51	50.3
21Dec 13	09:00:00	3600	53.8	77	48.6	56.5	55.3	50.6	50.2
21Dec 13	10:00:00	3600	56	74.7	49	60.1	57.8	51.4	51
21Dec 13	11:00:00	3600	53.6	69	48.5	57.6	55.8	50.4	50.1
21Dec 13	12:00:00	3600	52.6	68.9	48.1	55.8	54.4	50	49.5
21Dec 13	13:00:00	3600	53.1	74.3	47.5	56.9	54.7	49.5	49.1
21Dec 13	14:00:00	3600	54.1	73.6	48.6	57.3	56.2	50.8	50.3
21Dec 13	15:00:00	3600	54.5	77.4	48.4	57.4	56.6	50.2	49.9
21Dec 13	16:00:00	3600	53.5	74.7	46.9	55.9	53.9	49.4	49
21Dec 13	17:00:00	3600	52.1	63.8	48.4	54.1	53.4	50.2	49.7
21Dec 13	18:00:00	3600	53.3	70	48.9	56	54.6	50.9	50.3
21Dec 13	19:00:00	3600	51.9	67.4	47.8	53.7	52.9	50.1	49.8
21Dec 13	20:00:00	3600	51.3	62.9	48.1	53.1	52.7	49.7	49.3
21Dec 13	21:00:00	3600	52.3	71.5	48.3	54.4	53.6	50.2	49.8
21Dec 13	22:00:00	3600	52.6	68.2	47.1	56	54.6	49.6	49.2
21Dec 13	23:00:00	3600	52.1	69.7	46.5	55.7	54.2	49.1	48.5
22Dec 13	00:00:00	3600	51.7	68.6	45.9	54.7	53.4	48.7	48.2
22Dec 13	01:00:00	3600	52.3	71.1	45.6	55.9	54.4	48.2	47.6



22Dec 13	02:00:00	3600	51.1	64	45.6	54	53.1	48.4	47.8
22Dec 13	03:00:00	3600	51.6	62.9	46.6	54.5	53.6	49.1	48.5
22Dec 13	04:00:00	3600	53.4	72.1	46	57	55.5	49.4	48.9
22Dec 13	05:00:00	3600	51.8	71.9	44.9	55.4	53.8	47.7	47.2
22Dec 13	06:00:00	3600	51.2	68.6	45	54.8	53	47.2	46.6
22Dec 13	07:00:00	3600	50	69.4	43.9	52.6	51.6	47.1	46.6
22Dec 13	08:00:00	3600	51.4	73.6	45.7	54.2	52.6	48	47.5
22Dec 13	09:00:00	3600	53.5	72.8	47.1	56.9	54.9	49.2	48.7
22Dec 13	10:00:00	3600	51.6	75.6	46.3	53	52.4	49.1	48.6
22Dec 13	11:00:00	3600	52.8	73.6	47.6	55.9	54.1	49.3	49.1
22Dec 13	12:00:00	3600	52.7	67.6	48.1	54.9	53.8	50.5	50.2
22Dec 13	13:00:00	3600	52.6	66.9	48.4	55.2	54.1	50.4	50.1
22Dec 13	14:00:00	3600	52.8	69.9	48.8	55.1	54.3	50.9	50.4
22Dec 13	15:00:00	3600	54.2	77.4	49.5	56.8	55.5	51.2	51
22Dec 13	16:00:00	3600	52	62.6	49.3	53.6	52.9	50.6	50.3
22Dec 13	17:00:00	3600	52.2	69.2	48.6	54.5	53.6	50.2	50
22Dec 13	18:00:00	3600	53	68.3	48.2	57.8	55.4	50	49.5
22Dec 13	19:00:00	3600	51	60.4	48.3	52.7	52	49.7	49.3
22Dec 13	20:00:00	3600	51.8	65.3	48.3	53.9	52.9	50.1	49.7
22Dec 13	21:00:00	3600	51.2	63.2	47.1	53.5	52.6	49.3	49
22Dec 13	22:00:00	3600	50.2	59.1	46.6	52.3	51.7	48.4	48.1
22Dec 13	23:00:00	3600	49.5	60.2	45.4	51.9	51.2	47.5	47.2
23Dec 13	00:00:00	3600	48.7	63.9	43.8	51	50.3	46.6	46.2
23Dec 13	01:00:00	3600	47	55.9	42.8	49.4	48.7	45.1	44.6
23Dec 13	02:00:00	3600	44.9	51.9	41.1	46.8	46.3	43.2	42.9
23Dec 13	03:00:00	3600	45.1	56.3	41.3	47.1	46.6	43.3	43
23Dec 13	04:00:00	3600	45.7	61.7	41.7	47.7	47.1	43.9	43.4
23Dec 13	05:00:00	3600	49.6	72.9	43.5	49.3	48.3	45.3	45.1
23Dec 13	06:00:00	3600	49.8	71.5	45.1	51.5	50.7	46.7	46.3
23Dec 13	07:00:00	3600	50.9	61.3	47.6	52.8	52.2	49.2	49
23Dec 13	08:00:00	3600	55.2	78.8	49.3	57.4	55.3	50.8	50.4
23Dec 13	09:00:00	3600	55.9	74.6	49.3	60	58.2	51.2	50.7
23Dec 13	10:00:00	3600	61.1	85.9	51.2	67.6	64.9	53.5	53.1
23Dec 13	11:00:00	3600	57.8	76.7	51.1	62	59.8	53.3	52.9
23Dec 13	12:00:00	3600	58.1	78.6	50.6	62.7	60.2	53.2	52.8
23Dec 13	13:00:00	3600	57.9	75.3	51.1	62.4	60.3	53.3	52.8
23Dec 13	14:00:00	3600	56	74.8	50.3	59.7	57.9	52.1	51.7
23Dec 13	15:00:00	3600	56.1	76.8	49.8	59.8	57.9	51.7	51.2
23Dec 13	16:00:00	3600	54.7	74.9	49.2	58.2	56.7	51.2	50.9
23Dec 13	17:00:00	3600	56.1	75.2	49.2	60.4	58.2	51.1	50.6
23Dec 13	18:00:00	3600	55.2	72.8	47.7	59.4	57.2	51	50.4
23Dec 13	19:00:00	3600	56.3	76	48.6	60.6	58.5	51.4	50.9
23Dec 13	20:00:00	3600	55.2	77.1	48.2	59.6	57.6	50.4	50
23Dec 13	21:00:00	3600	54.9	72.3	47.5	59	57.3	50.1	49.5

23Dec 13	22:00:00	3600	54.8	72.8	47.4	58.8	56.9	50.3	49.8
23Dec 13	23:00:00	3600	55.9	74.4	47.6	60	58.2	50.6	50.1
24Dec 13	00:00:00	3600	56.6	80	47.3	60.7	58.3	50.5	50
24Dec 13	01:00:00	3600	57.4	79.4	47	62.6	59.8	50	49.3
24Dec 13	02:00:00	3600	57.2	77	46.3	62.8	60.4	49.7	49
24Dec 13	03:00:00	3600	57.6	78.1	44.3	63.2	60.3	49.4	48.5
24Dec 13	04:00:00	3600	50.7	68	43.4	54.7	53.2	45.8	45.2
24Dec 13	05:00:00	3600	54.6	76.5	43.9	58.8	56.6	47.7	46.9
24Dec 13	06:00:00	3600	56.9	76	46.4	61.9	59.5	49.4	48.5
24Dec 13	07:00:00	3600	57.8	75.7	48.2	63	60.4	51	50.3
24Dec 13	08:00:00	3600	59.7	78.1	48.3	65.4	62.3	51.5	50.9
24Dec 13	09:00:00	3600	61.5	79.7	50.1	67.3	64.6	53.7	53
24Dec 13	10:00:00	3600	62.1	83.4	50.6	67.7	64.9	54	53.2
24Dec 13	11:00:00	3600	62.4	86.2	50.8	67.9	65.2	54.4	53.6
24Dec 13	12:00:00	3600	63	80.1	52.2	68.9	66.5	55.3	54.4
24Dec 13	13:00:00	3600	62.6	84.6	52.4	68	65.6	55.5	55
24Dec 13	14:00:00	3600	59.2	80.4	50.1	63.9	61.2	53.3	52.7
24Dec 13	15:00:00	3600	55.9	77.1	49.7	58.5	56.6	52	51.4
24Dec 13	16:00:00	3600	53.8	72.3	49.6	55.9	54.9	51.5	51.2
24Dec 13	17:00:00	3600	55.3	74.7	49.9	58.9	57.1	51.9	51.4
24Dec 13	18:00:00	3600	55	71.5	49.4	58.4	56.8	51.6	51.2
24Dec 13	19:00:00	3600	53.5	70.5	48.2	56.4	55.1	50.7	50.2
24Dec 13	20:00:00	3600	52.2	67.4	47.9	54.6	53.6	49.7	49.3
24Dec 13	21:00:00	3600	51.2	75.2	45.2	53.5	51.9	48	47.4
24Dec 13	22:00:00	3600	49	62.2	44.6	51.3	50.6	47	46.4
24Dec 13	23:00:00	3600	46.1	60.5	42	48.4	47.8	44.1	43.5
25Dec 13	00:00:00	3600	45.1	61.5	40.2	47.4	46.7	43	42.4
25Dec 13	01:00:00	3600	43.3	65.6	39.1	45	44.4	41.1	40.6
25Dec 13	02:00:00	3600	42	54.5	36.8	44.7	43.8	39.4	38.9
25Dec 13	03:00:00	3600	41.1	54.3	36.1	44	43.1	38.5	38.1
25Dec 13	04:00:00	3600	40.2	50.6	34.9	43	42.1	37.6	37.1
25Dec 13	05:00:00	3600	41.7	63.1	35.6	44.1	43.2	38.8	38.2
25Dec 13	06:00:00	3600	45.8	68.2	37.7	47.6	46.4	40.8	40.2
25Dec 13	07:00:00	3600	45.9	62.6	39.5	49	48.1	43	42.4
25Dec 13	08:00:00	3600	46.3	58.4	41.2	49	48.2	43.9	43.4
25Dec 13	09:00:00	3600	47.7	56.1	42.4	50	49.4	45.2	44.7
25Dec 13	10:00:00	3600	50.2	77.6	44.6	51.7	50.1	46.5	46.1
25Dec 13	11:00:00	3600	48.6	77.2	43.3	50	48.3	44.8	44.4
25Dec 13	12:00:00	3600	47.1	71.4	37.7	50	47.4	40	39.4
25Dec 13	13:00:00	3600	44.1	60.3	37.4	47.7	46.2	39.8	39.2
25Dec 13	14:00:00	3600	48.7	75.7	40.2	50.7	48.5	42.9	42.3
25Dec 13	15:00:00	3600	47.3	58.7	42.8	51	50	44.7	44.3
25Dec 13	16:00:00	3600	47.3	59.3	42.1	51.5	50.1	44.5	44.1
25Dec 13	17:00:00	3600	46.5	69.9	42.5	48.6	47.8	44.5	44.1

25Dec 13	18:00:00	3600	48.4	68.7	44	50	49.1	46	45.5
25Dec 13	19:00:00	3600	47.7	60.5	44.1	49.9	49.3	46	45.5
25Dec 13	20:00:00	3600	48.4	63.5	45.1	50.1	49.6	46.7	46.3
25Dec 13	21:00:00	3600	48.3	70.1	44	49.8	49.1	46.1	45.8
25Dec 13	22:00:00	3600	47	57.7	43	49.3	48.7	45.1	44.5
25Dec 13	23:00:00	3600	46.9	63.1	42.1	49.6	48.8	44.4	44.1
26Dec 13	00:00:00	3600	45.3	50.6	40.2	48	47.4	42.8	42.1
26Dec 13	01:00:00	3600	43.7	54.2	36	48	46.4	40.2	39.5
26Dec 13	02:00:00	3600	41.1	51.5	35.4	45.2	43.2	38	37.4
26Dec 13	03:00:00	3600	41.1	50.7	35.2	44.7	43	38	37.3
26Dec 13	04:00:00	3600	42.8	61.3	36	45.8	43.4	38.4	38
26Dec 13	05:00:00	3600	42.4	52.4	36.9	45.4	44.4	39.7	39.1
26Dec 13	06:00:00	3600	45.2	71.3	37	48.3	47.2	40.5	40.1
26Dec 13	07:00:00	3600	47.4	64.4	41.5	50.1	49	44.2	43.7
26Dec 13	08:00:00	3600	47.2	61.8	41.8	50.5	49.4	44.2	43.7
26Dec 13	09:00:00	3600	50.4	75.9	43.6	53.2	51.1	46	45.4
26Dec 13	10:00:00	3600	50.2	75.5	43.7	51.4	50	46.1	45.6
26Dec 13	11:00:00	3600	48.5	63.1	43.2	52.5	50.8	45.1	44.5
26Dec 13	12:00:00	3600	48.6	71.2	40.1	51.9	50.5	43	42.4
26Dec 13	13:00:00	3600	47.3	67.3	40.4	49.6	48.8	42.7	42.3
26Dec 13	14:00:00	3600	46.5	60.2	41.7	50.2	49.2	43.7	43.3
26Dec 13	15:00:00	3600	46.8	58.4	42.1	50.2	49.2	44.3	44.1
26Dec 13	16:00:00	3600	49.3	70.9	44.4	51	50	46	45.6
26Dec 13	17:00:00	3600	49.6	65.9	44.7	53.6	52.2	46.3	46
26Dec 13	18:00:00	3600	50	68.4	44.4	53.1	51.7	47.1	46.7
26Dec 13	19:00:00	3600	55.8	79.4	46.6	60.2	57.9	48.7	48.1
26Dec 13	20:00:00	3600	59.1	81	50	63.9	61.5	53.1	52.4
26Dec 13	21:00:00	3600	56.1	74.4	48	60.7	58.1	51	50.3
26Dec 13	22:00:00	3600	60.4	81.6	48.5	65.9	63.2	52	51.1
26Dec 13	23:00:00	3600	62.1	85.7	48.4	67.9	65.6	52.5	51.3
27Dec 13	00:00:00	3600	59.3	79.2	47.6	65	62.1	51.4	50.6
27Dec 13	01:00:00	3600	62.9	82.3	47.3	68.8	66.2	52.5	51.4
27Dec 13	02:00:00	3600	66.1	85.2	51.6	71.6	69.6	57.1	56.1
27Dec 13	03:00:00	3600	66.1	88.7	51	71.7	69.2	56	54.9
27Dec 13	04:00:00	3600	65.4	88.3	51.7	71	68.7	56.2	55.1
27Dec 13	05:00:00	3600	66.7	85.6	51.1	72.3	70	56.5	54.7
27Dec 13	06:00:00	3600	67	86.8	52.7	72.6	70.3	56.8	55.9
27Dec 13	07:00:00	3600	60.9	82.6	50.7	66	63.4	54	53.2
27Dec 13	08:00:00	3600	60.9	79.2	51.3	65.7	63.5	54.6	54
27Dec 13	09:00:00	3600	59.9	80.2	51.5	64.7	62.4	54.4	53.8
27Dec 13	10:00:00	3600	60.2	83.3	51	65.5	62.7	54.2	53.5
27Dec 13	11:00:00	3600	59.6	79.6	51.4	64.4	61.9	54.3	53.7
27Dec 13	12:00:00	3600	58.8	78.8	51	63.5	61.1	53.7	53.2
27Dec 13	13:00:00	3600	58.4	78.7	51.6	62.9	60.9	54	53.4

27Dec 13	14:00:00	3600	59.1	77.8	51.6	63.7	61.4	54.4	53.9
27Dec 13	15:00:00	3600	59.4	79.9	51	63.8	61.2	54	53.4
27Dec 13	16:00:00	3600	54.9	68.9	49.5	58	56.7	51.9	51.4
27Dec 13	17:00:00	3600	58.2	76.3	50.6	62.6	60	53.5	53
27Dec 13	18:00:00	3600	55.4	72.3	49.1	59	57.4	51.8	51.2
27Dec 13	19:00:00	3600	52.3	66.1	48.1	55	54	50.2	49.7
27Dec 13	20:00:00	3600	52.5	69.2	46.4	55.3	54	49.5	48.9
27Dec 13	21:00:00	3600	51.1	65.7	45.6	55	53.5	47.9	47.3
27Dec 13	22:00:00	3600	49.4	64.1	44.9	52.6	51	46.7	46.2
27Dec 13	23:00:00	3600	50.4	69	44.5	52.9	51.7	47.3	46.9
28Dec 13	00:00:00	3600	49.2	58.7	44	51.7	51	46.6	46.1
28Dec 13	01:00:00	3600	48.8	59	42.8	52.7	51.3	45.4	45.1
28Dec 13	02:00:00	3600	46.9	54.4	42.8	49.4	48.7	44.5	44.1
28Dec 13	03:00:00	3600	47.4	56.8	42.4	50.4	49.5	44.6	44.2
28Dec 13	04:00:00	3600	47.2	61.6	42.7	50.4	49.4	44.4	44.1
28Dec 13	05:00:00	3600	47	61.1	42.1	49.8	49	44	43.5
28Dec 13	06:00:00	3600	48.6	63.8	43.3	51.9	50.7	45.6	45.1
28Dec 13	07:00:00	3600	48.5	66.3	43.8	51.3	50.1	46.3	46.1
28Dec 13	08:00:00	3600	50.6	70.7	44.7	54.3	52.7	46.4	46.1
28Dec 13	09:00:00	3600	56.5	86.9	45.5	57.9	54.5	47.8	47.3
28Dec 13	10:00:00	3600	51.5	69.6	46.5	54.7	53.1	49	48.5
28Dec 13	11:00:00	3600	52.3	68.1	46.6	56	54.7	48.7	48.3
28Dec 13	12:00:00	3600	52.4	70.8	47.1	55.7	54.7	49.2	48.8
28Dec 13	13:00:00	3600	55.7	82.8	46.3	57.5	55.5	49.2	48.7
28Dec 13	14:00:00	3600	51.7	60.4	47.5	54.7	53.8	49.2	49
28Dec 13	15:00:00	3600	53.3	76	47	55.9	54.9	49.4	49
28Dec 13	16:00:00	3600	53	74.4	47.8	56.7	55.6	49.4	49.1
28Dec 13	17:00:00	3600	52.7	70	47.9	56.7	55.3	49.5	49.2
28Dec 13	18:00:00	3600	51.9	64.9	47.4	55.8	54.4	49.2	48.9
28Dec 13	19:00:00	3600	51.7	62.6	47.4	55.1	53.9	49.1	48.8
28Dec 13	20:00:00	3600	51.3	62.3	47	54.7	53.4	49.1	48.6
28Dec 13	21:00:00	3600	51.7	71.7	46.4	55.5	54	48.2	47.7
28Dec 13	22:00:00	3600	49.8	67.3	45.1	51.4	50.7	47.3	47.1
28Dec 13	23:00:00	3600	48.8	55.2	44.6	50.9	50.4	47.1	46.6
29Dec 13	00:00:00	3600	48.6	54.4	44.3	50.9	50.2	46.5	46.1
29Dec 13	01:00:00	3600	48.4	54.9	44.2	50.6	50	46.4	46.1
29Dec 13	02:00:00	3600	48.7	63.3	43.7	50.9	50.4	46.3	45.9
29Dec 13	03:00:00	3600	48	60.5	42.5	50.5	49.8	45.8	45.2
29Dec 13	04:00:00	3600	48.2	56.4	43.3	50.7	50	45.9	45.3
29Dec 13	05:00:00	3600	46.5	57.8	41.3	49.3	48.5	43.7	43.2
29Dec 13	06:00:00	3600	45.7	59.1	40.8	47.8	47	43.4	42.8
29Dec 13	07:00:00	3600	47.7	72.5	42.6	51	49.3	44.6	44.2
29Dec 13	08:00:00	3600	48.6	67.4	43.3	52.5	50.5	45.4	45.1
29Dec 13	09:00:00	3600	51.4	78.9	43.9	51.5	50.4	45.6	45.2

29Dec 13	10:00:00	3600	51.1	75.4	43.5	54.7	50.7	45.9	45.3
29Dec 13	11:00:00	3600	49.5	74.2	43.3	52.3	50	44.9	44.4
29Dec 13	12:00:00	3600	48.3	59.5	44	50.4	49.8	46.3	45.9
29Dec 13	13:00:00	3600	52.2	75.4	45.1	53.4	51.3	47.1	46.5
29Dec 13	14:00:00	3600	49.4	75.3	44.7	51.4	50.7	46.6	46.2
29Dec 13	15:00:00	3600	52.6	73.6	45.8	55.4	53.4	47.9	47.4
29Dec 13	16:00:00	3600	52.8	76	46.5	54.8	53.3	48.6	48.3
29Dec 13	17:00:00	3600	50.2	60.5	46.2	52.4	51.6	48.2	47.8
29Dec 13	18:00:00	3600	52	72	46.9	55	53.6	49.3	48.9
29Dec 13	19:00:00	3600	52.4	70.7	46.9	55.6	54.3	49.4	49
29Dec 13	20:00:00	3600	52	68.1	46.5	55.3	54	49.1	48.5
29Dec 13	21:00:00	3600	52.8	70.4	46.8	56.5	54.8	49.3	48.9
29Dec 13	22:00:00	3600	54.7	77.2	45.8	59.3	57.2	49.5	49
29Dec 13	23:00:00	3600	54.4	72	46.8	58.5	56.5	49.5	49
30Dec 13	00:00:00	3600	55.2	74.9	46.7	59.9	57.6	49.7	49.2
30Dec 13	01:00:00	3600	51.3	70.5	43.2	55.7	53.8	46.3	45.7
30Dec 13	02:00:00	3600	49.1	64.4	42.4	52.9	51.4	45.5	44.9
30Dec 13	03:00:00	3600	48.4	63.5	42.9	51.3	50.1	45.9	45.3
30Dec 13	04:00:00	3600	48.5	75.3	42.9	51.5	50.6	45.5	44.8
30Dec 13	05:00:00	3600	49.4	58.5	44.2	52.7	52	46.1	45.6
30Dec 13	06:00:00	3600	50.1	65.2	44.1	52.8	51.9	47.2	46.7
30Dec 13	07:00:00	3600	51.6	67.6	46.2	54.8	53.5	48.3	48.1
30Dec 13	08:00:00	3600	52.3	79.2	46.3	54.7	53.6	48.4	48.1
30Dec 13	09:00:00	3600	54	78.4	47.1	55.9	54.6	49.1	48.5
30Dec 13	10:00:00	3600	52.4	71.2	47.2	54.9	54	49.4	49.1
30Dec 13	11:00:00	3600	54.1	76.8	47.7	56.9	55.3	50	49.5
30Dec 13	12:00:00	3600	56.3	85	48.7	60.9	55.3	50.9	50.4
30Dec 13	13:00:00	3600	52.3	71.7	47.2	53.9	53.3	49.5	49.2
30Dec 13	14:00:00	3600	53	75.9	46.6	55	53.2	48.9	48.3
30Dec 13	15:00:00	3600	52.9	79.2	46.5	55	52.7	48.6	48.1
30Dec 13	16:00:00	3600	50.8	72.8	47.1	52.9	52.3	48.6	48.2
30Dec 13	17:00:00	3600	54.4	75.3	47	57.1	53.7	48.7	48.3
30Dec 13	18:00:00	3600	50	63.2	46.4	53.1	52.3	47.6	47.3
30Dec 13	19:00:00	3600	50.8	68	46	53.2	52.5	48	47.5
30Dec 13	20:00:00	3600	50	64.4	45.2	52.7	51.8	47.6	47.2
30Dec 13	21:00:00	3600	49.2	68.8	44.8	51.7	50.9	46.9	46.4
30Dec 13	22:00:00	3600	48.9	75	44.5	51.9	51.1	46.1	45.7
30Dec 13	23:00:00	3600	49.1	61	43.6	52.6	51.7	45.6	45.2
31Dec 13	00:00:00	3600	47.7	59.8	42.2	50.7	49.9	44.3	43.8
31Dec 13	01:00:00	3600	46.8	57.2	41.3	50.1	49.2	43.2	42.8
31Dec 13	02:00:00	3600	46.5	62	41	49.7	48.6	43.2	42.6
31Dec 13	03:00:00	3600	45.7	59.4	40.6	48	47.2	43.1	42.4
31Dec 13	04:00:00	3600	47.9	67.5	41.2	51.7	50	44	43.3
31Dec 13	05:00:00	3600	53.2	72.6	43.5	58.5	55.7	46.1	45.3

31Dec 13	06:00:00	3600	48.6	64.3	43.3	51.8	50.6	46.1	45.7
31Dec 13	07:00:00	3600	52	71.5	45.2	55.6	52.6	47.6	47.1
31Dec 13	08:00:00	3600	51.3	68	46.2	55.2	53	48.3	47.9
31Dec 13	09:00:00	3600	52	72.4	46.9	55.2	53.2	49.2	48.8
31Dec 13	10:00:00	3600	50.6	70.1	46.6	52.4	51.5	48.4	48.1
31Dec 13	11:00:00	3600	48.9	67.8	45.1	51.6	50.3	46.7	46.3
31Dec 13	12:00:00	3600	51.9	74	46	56	53.8	47.7	47.3
31Dec 13	13:00:00	3600	58.9	80.1	49.3	64	61.3	52.4	51.7
31Dec 13	14:00:00	3600	59.9	87	49.2	60.4	56.6	51	50.5
31Dec 13	15:00:00	3600	55.6	84.9	48.7	54.9	53.1	50.1	49.6
31Dec 13	16:00:00	3600	49.8	75.4	45.3	51.6	50.9	47.1	46.5
31Dec 13	17:00:00	3600	49	63.8	44.9	51.3	50.6	46.6	46.2
31Dec 13	18:00:00	3600	48.9	64.1	46	50.6	49.9	47.5	47.2
31Dec 13	19:00:00	3600	49.5	60.5	46.5	51.2	50.6	48.1	47.6
31Dec 13	20:00:00	3600	48.7	69.5	45.6	50.2	49.8	47.3	47.1
31Dec 13	21:00:00	3600	47.8	64.4	44.1	49.9	49.5	45.5	45.2
31Dec 13	22:00:00	3600	48.2	69.6	43.9	49.9	49.3	45.6	45.2
31Dec 13	23:00:00	3600	50.8	78.4	43.8	53.8	51.7	46.4	46
01Jan 14	00:00:00	3600	58.3	91	44.4	56.8	52.8	46.4	46.1
01Jan 14	01:00:00	3600	47.6	63	44.1	49.7	49	46	45.6
01Jan 14	02:00:00	3600	48.7	73	43.9	50.6	49.7	46.1	45.8
01Jan 14	03:00:00	3600	48.8	59.5	44.7	50.9	50.4	46.7	46.3
01Jan 14	04:00:00	3600	47.7	63.5	43.9	50.2	49.6	45.5	45.2
01Jan 14	05:00:00	3600	47.1	66.1	42.4	49.5	48.8	44.7	44.2
01Jan 14	06:00:00	3600	45.7	64.4	41	47.8	47	43	42.5
01Jan 14	07:00:00	3600	45.7	64	41.5	48.3	47.7	43.3	43
01Jan 14	08:00:00	3600	47.8	73.4	42.9	50.6	49.5	44.4	44.1
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01Jan 14	10:00:00	3600	52.7	71.8	47.2	55.9	54.5	49.4	49.1
01Jan 14	11:00:00	3600	54.1	85	46.1	56.8	55	48.8	48.2
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01Jan 14	13:00:00	3600	49.3	67.9	45.3	51.6	50.9	47.3	47
01Jan 14	14:00:00	3600	51.3	69.8	44.8	54.8	53.3	47.5	47.1
01Jan 14	15:00:00	3600	51.2	67.6	46.4	53.9	53	48.9	48.3
01Jan 14	16:00:00	3600	52	65.9	47.5	54.7	53.7	49.4	49.1
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01Jan 14	20:00:00	3600	50.1	64.2	44.2	52.6	51.3	47.2	46.7
01Jan 14	21:00:00	3600	48.3	69.2	43.1	50.2	49.6	45.9	45.3
01Jan 14	22:00:00	3600	47.4	59.6	43.6	49.7	48.9	45.4	45.1
01Jan 14	23:00:00	3600	47.6	71.6	42.4	49.5	48.7	45	44.4
02Jan 14	00:00:00	3600	47.1	74.1	42.1	49.3	48.5	44.6	44.2
02Jan 14	01:00:00	3600	46.7	60.5	40.9	49.7	48.5	44.1	43.7

02Jan 14	02:00:00	3600	45.9	63.3	40.3	49.4	47.8	42.6	42.2
02Jan 14	03:00:00	3600	45.5	59.8	39	48.6	47.5	42.2	41.6
02Jan 14	04:00:00	3600	46.3	57.9	38.7	51.7	50.3	42.1	41.5
02Jan 14	05:00:00	3600	51.7	63.5	41.6	56.9	55.6	44.3	43.7
02Jan 14	06:00:00	3600	53	65.8	45.8	57	56	48.3	47.7
02Jan 14	07:00:00	3600	53.9	76.1	47.8	56.6	55.7	50.3	49.8
02Jan 14	08:00:00	3600	55.8	76.4	49.5	58.9	57.9	51.7	51.3
02Jan 14	09:00:00	3600	58	81.1	50	61.4	58.8	53	52.2
02Jan 14	10:00:00	3600	58.8	85	50.4	61.6	59.6	52.9	52.3
02Jan 14	11:00:00	3600	56.1	78.5	50.6	59.3	57.9	52.4	52.1
02Jan 14	12:00:00	3600	55.1	72.3	49.2	58	57.1	52.2	51.6
02Jan 14	13:00:00	3600	54.5	78.9	46.1	56.9	55.8	48.8	48.2
02Jan 14	14:00:00	3600	54.7	76.4	47.5	57.9	56.3	49.9	49.2
02Jan 14	15:00:00	3600	54.4	72.7	47.9	57.3	56.1	50.6	50
02Jan 14	16:00:00	3600	54.2	75.3	45.5	56.7	55.5	49.6	49.1
02Jan 14	17:00:00	3600	51.2	65.7	46.1	54.8	53.9	48	47.5
02Jan 14	18:00:00	3600	50.5	62.7	44.4	53.7	52.9	47	46.4
02Jan 14	19:00:00	3600	50.9	65.1	45.5	53.3	52.6	47.5	47.2
02Jan 14	20:00:00	3600	51.3	67.1	46	54.7	53.9	48.1	47.6
02Jan 14	21:00:00	3600	53.5	79.2	46.4	56.5	54.9	49.9	49.3
02Jan 14	22:00:00	3600	51.6	67.2	44.6	54.9	53.6	48.1	47.2
02Jan 14	23:00:00	3600	58.5	77	46	63.8	60.8	50.4	49.6
03Jan 14	00:00:00	3600	53.6	72.7	43.7	57.8	56.1	47.2	46.5
03Jan 14	01:00:00	3600	58.3	81.3	43.6	64.2	61.1	47.3	46.2
03Jan 14	02:00:00	3600	60.5	82.6	44.2	66.7	63.7	47.8	46.7
03Jan 14	03:00:00	3600	55.3	73.3	42.8	61	57.9	46.2	45.4
03Jan 14	04:00:00	3600	58.5	79.7	44.2	64.2	61.3	47.8	46.7
03Jan 14	05:00:00	3600	60.1	81.2	46.1	65.9	62.9	50.1	49.3
03Jan 14	06:00:00	3600	60.3	82.2	48.1	66	63.1	53.2	52.3
03Jan 14	07:00:00	3600	60.5	78.9	51.3	65.9	63.1	54.2	53.6
03Jan 14	08:00:00	3600	58	78.1	50.7	61.9	59.7	52.9	52.3
03Jan 14	09:00:00	3600	58.4	78.4	51.1	62.3	59.9	53.1	52.6
03Jan 14	10:00:00	3600	58.7	78.3	50.7	63.3	60.7	53.4	53
03Jan 14	11:00:00	3600	58	75.5	51.2	62.4	60.3	53.2	52.6
03Jan 14	12:00:00	3600	59.1	76.4	50.9	63.5	61	53.6	53
03Jan 14	13:00:00	3600	58.4	77	49.5	62.8	61	53.3	52.6
03Jan 14	14:00:00	2948.3	56.5	75	50	60.1	59	53.1	52.5
03Jan 14	14:55:54	245	56.7	75.4	51.9	59.9	58.4	53.3	53
03Jan 14	15:00:00	3600	56.6	76.4	50.3	59.7	58.2	53	52.4
03Jan 14	16:00:00	3600	55.9	68.8	50.3	58.9	57.8	53.2	52.7
03Jan 14	17:00:00	3600	54.6	71.2	49.3	58.2	57	51.1	50.6
03Jan 14	18:00:00	3600	55.2	68.4	48.9	58.9	57.7	51.5	51.1
03Jan 14	19:00:00	3600	55.9	73.9	49.2	59.7	58.3	51.9	51.3
03Jan 14	20:00:00	3600	57.2	78.5	49.4	61.2	59.3	52.4	51.8

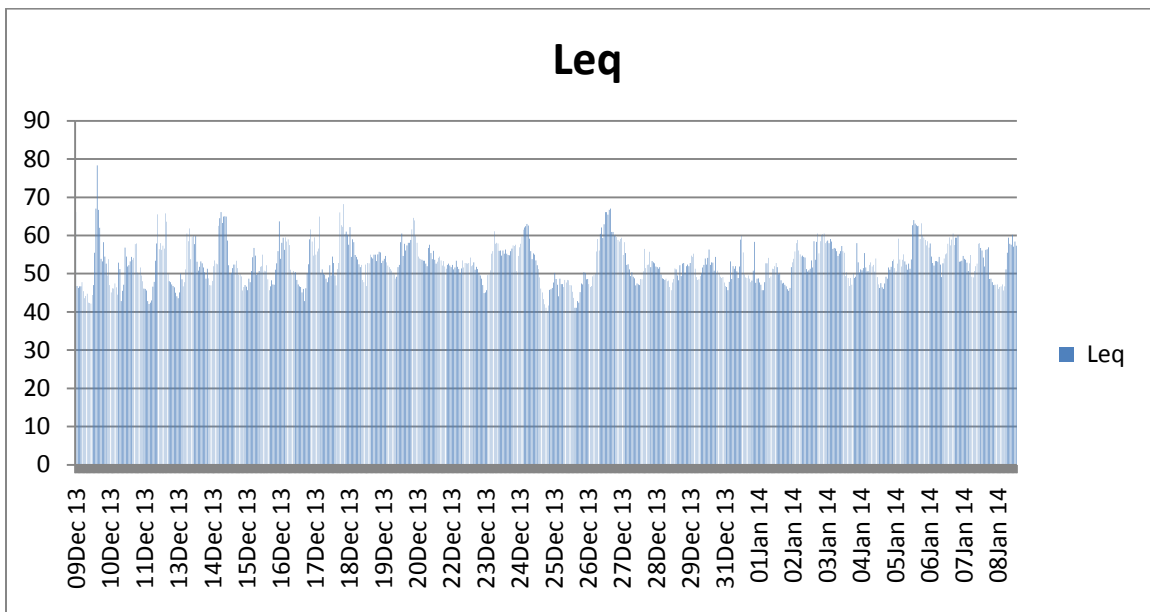
03Jan 14	21:00:00	3600	55.9	76.3	49.3	59.7	57.9	51.7	51.2
03Jan 14	22:00:00	3600	55.5	73	45.8	60.5	58.3	49.2	48.3
03Jan 14	23:00:00	3600	49.4	62	42.9	52.9	51.7	45.8	45
04Jan 14	00:00:00	3600	50.4	78.6	42.7	54	52.5	44.9	44.4
04Jan 14	01:00:00	3600	48.9	60.7	42.8	53.7	52.5	45.2	44.8
04Jan 14	02:00:00	3600	46.8	55.2	41.4	51	50.2	43.5	43.2
04Jan 14	03:00:00	3600	48.9	57.4	38.5	54.1	53.2	41.1	40.5
04Jan 14	04:00:00	3600	47.1	57	37.7	53.7	52.8	40	39.4
04Jan 14	05:00:00	3600	50.1	65.5	36.4	54.2	53.4	39.2	38.4
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04Jan 14	08:00:00	3600	58	88.7	42.7	57.9	55.1	45.5	45
04Jan 14	09:00:00	3600	53	78.4	45.8	54.5	51.8	48.1	47.6
04Jan 14	10:00:00	3600	50.3	73.1	45	52.4	50.7	46.5	46.2
04Jan 14	11:00:00	3600	51.1	74.4	43	54.8	53.5	45.6	45.2
04Jan 14	12:00:00	3600	50.9	65	41.8	54.8	53.9	44.3	43.7
04Jan 14	13:00:00	3600	51.5	71	43.3	54.7	53.5	46.3	45.7
04Jan 14	14:00:00	3600	55.4	82	44.5	58	55.7	46.4	46.1
04Jan 14	15:00:00	3600	51.6	69.6	43.8	55.2	54.1	45.8	45.4
04Jan 14	16:00:00	3600	50.6	62.4	44.4	54.4	53.5	46.6	46.1
04Jan 14	17:00:00	3600	50.7	62.4	45.7	54.8	53.6	47.1	46.7
04Jan 14	18:00:00	3600	52.3	68.7	46.4	56.3	55.1	48.3	48
04Jan 14	19:00:00	3600	53	75.9	46.8	57.1	55.6	49	48.5
04Jan 14	20:00:00	3600	51.9	62.4	46.1	56.5	55.1	48.3	48
04Jan 14	21:00:00	3600	52.3	62.4	44.8	57.3	56.2	47.4	47.1
04Jan 14	22:00:00	3600	50.5	62.3	44.1	55.7	54	46.5	46.1
04Jan 14	23:00:00	3600	54	73.7	45	59.9	56.9	46.7	46.3
05Jan 14	00:00:00	3600	49.1	67.1	43.3	54	52.5	45.5	45.2
05Jan 14	01:00:00	3600	47.2	66.1	41.3	51.8	51.1	43.8	43.3
05Jan 14	02:00:00	3600	46.3	54.4	41.9	50.8	49.7	43.6	43.2
05Jan 14	03:00:00	3600	47.5	61.6	42	52.1	51.2	43.7	43.3
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05Jan 14	05:00:00	3600	46	63.5	39.6	51.1	50	42.1	41.7
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05Jan 14	08:00:00	3600	48.7	67.2	42	52.7	51.6	43.6	43.3
05Jan 14	09:00:00	3600	51.6	74	44.2	54.7	53.5	46.2	45.7
05Jan 14	10:00:00	3600	51	68.7	44	54.5	53.4	46.6	46.1
05Jan 14	11:00:00	3600	51.8	78.9	45.1	54.1	53	47.1	46.6
05Jan 14	12:00:00	3600	53.3	72.3	48.2	56.9	55.2	49.7	49.3
05Jan 14	13:00:00	3600	53.7	71.9	47.7	57.7	55.9	49.7	49.3
05Jan 14	14:00:00	3600	51.5	71	47	54.7	53.5	49	48.4
05Jan 14	15:00:00	3600	50.6	72.7	44.9	53.2	51.6	47.3	47
05Jan 14	16:00:00	3600	52.6	68.6	46.8	56.8	54.6	49.1	48.6



05Jan 14	17:00:00	3600	59.2	77.8	49.6	64.4	61.7	52.6	52
05Jan 14	18:00:00	3600	53.7	71.5	48.8	56	54.9	50.6	50.2
05Jan 14	19:00:00	3600	51.9	73.5	48	54.2	53	49.8	49.3
05Jan 14	20:00:00	3600	53.6	72.7	47.6	56.9	55.7	49.7	49.2
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05Jan 14	23:00:00	3600	52.4	69.5	45	55.9	54.9	48.1	47.4
06Jan 14	00:00:00	3600	51	66.7	44.6	54.4	53.2	47.3	46.7
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06Jan 14	02:00:00	3600	51.3	69.7	42	55.9	54.2	44.8	44.1
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06Jan 14	15:00:00	3600	57.4	75	51.4	61.1	59.1	53.4	53
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06Jan 14	17:00:00	3600	56.8	77.3	49.6	60.9	58.9	52.1	51.5
06Jan 14	18:00:00	3600	57.9	76.1	50.5	63.1	60.5	52.4	52
06Jan 14	19:00:00	3600	54.5	72.2	48.6	57.8	56.5	50.9	50.4
06Jan 14	20:00:00	3600	52.8	70.2	47.6	56	54.7	49.5	49.1
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06Jan 14	22:00:00	3600	53.3	70.7	45.5	56.9	55.3	48.6	48.1
06Jan 14	23:00:00	3600	53.3	71.5	45	57	55.7	47.6	47
07Jan 14	00:00:00	3600	53.1	73.3	45	57.2	55.5	47.6	47
07Jan 14	01:00:00	3600	54.4	72.2	45.2	58.7	56.7	48	47.3
07Jan 14	02:00:00	3600	52.4	74.8	40.6	57.1	54.8	45.5	44.7
07Jan 14	03:00:00	3600	49.1	65.8	42	53.3	51.7	44.6	44.1
07Jan 14	04:00:00	3600	52.7	75.7	41.7	56.8	55	46.6	45.7
07Jan 14	05:00:00	3600	54	73.5	44.1	57.8	56.3	47.7	46.8
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07Jan 14	08:00:00	3600	57.8	75.5	51.6	60.9	59.9	54.5	54
07Jan 14	09:00:00	3600	59.5	79.3	52.3	62.7	61.3	55.6	54.9
07Jan 14	10:00:00	3600	57.4	75	50.4	60.9	59.9	52.6	52
07Jan 14	11:00:00	3600	58.9	74	52.1	63.4	61.6	55.1	54.4
07Jan 14	12:00:00	3600	60.5	73.6	52.6	64.8	63.6	56	55.3

07Jan 14	13:00:00	3600	57.5	74.3	50.7	61.7	59.5	53.5	53.1
07Jan 14	14:00:00	3600	59.4	79.1	52.3	63	61.9	54.6	54.1
07Jan 14	15:00:00	3600	59.4	75.5	54	64.1	62.8	55.6	55.3
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07Jan 14	17:00:00	3600	53.1	71	49.7	54.9	54	51.2	51
07Jan 14	18:00:00	3600	53.2	66.5	49	55	54.3	51.4	51.1
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07Jan 14	21:00:00	3600	53.9	72.3	47.8	57.7	56.2	50.3	50
07Jan 14	22:00:00	3600	53.6	72.6	47.2	57.1	55.8	49.7	49.2
07Jan 14	23:00:00	3600	52.9	67.3	44.7	56.8	55.7	47.9	47.1
08Jan 14	00:00:00	3600	50.7	68.2	43.6	54.4	52.8	47.2	46.6
08Jan 14	01:00:00	3600	52.7	69.5	43.5	56.9	55.8	46.7	46.1
08Jan 14	02:00:00	3600	54.9	83.2	41.2	56.2	54.6	44.4	43.8
08Jan 14	03:00:00	3600	49.2	62.5	40.7	53.3	51.9	44.8	44.1
08Jan 14	04:00:00	3600	49	63.2	40.9	53.6	52.2	43.3	42.9
08Jan 14	05:00:00	3600	50.7	64.3	40.7	55.5	54.5	43.9	43.3
08Jan 14	06:00:00	3600	52	73.9	43.5	55.4	54.4	47.4	46.7
08Jan 14	07:00:00	3600	52.6	66.4	47	55	54.4	49.9	49.3
08Jan 14	08:00:00	3600	57.8	81.3	50.2	62.2	60.2	52.5	52
08Jan 14	09:00:00	3600	58	79.5	48.9	62.3	59.8	52.1	50.8
08Jan 14	10:00:00	3600	56.7	80.3	49.8	60.4	58.4	51.2	51
08Jan 14	11:00:00	3600	56.1	76.2	49.7	59.8	58.5	52.1	51.4
08Jan 14	12:00:00	3600	54.2	75.7	46.5	58.7	57.9	49.3	48.4
08Jan 14	13:00:00	3600	51.9	68.2	43.2	55	54	46.6	46.1
08Jan 14	14:00:00	3600	56.2	73.5	46.6	59.7	58.4	50.3	49.3
08Jan 14	15:00:00	3600	56.4	75.4	46	61.3	58.7	49.8	48.9
08Jan 14	16:00:00	3600	56.9	77.2	45.2	61.8	60	50.5	49.5
08Jan 14	17:00:00	3600	48.6	67.3	43.4	50.9	49.7	45.2	44.8
08Jan 14	18:00:00	3600	48.7	67.5	43.3	51.4	49.8	45	44.5
08Jan 14	19:00:00	3600	47.8	64	40.9	50.9	50	43.4	42.7
08Jan 14	20:00:00	3600	47	60.8	40.1	50.7	49.8	42.2	41.6
08Jan 14	21:00:00	3600	47.1	60.1	37.8	51.7	50.6	40.2	39.8
08Jan 14	22:00:00	3600	47.1	60.3	40.9	50.7	50	43	42.5
08Jan 14	23:00:00	3600	47.2	57.1	40.2	50.8	49.9	42.8	42.3
09Jan 14	00:00:00	3600	46	54	37.7	49.6	48.7	40.4	39.9
09Jan 14	01:00:00	3600	46.5	57.9	35.6	52.8	51.4	38.2	37.8
09Jan 14	02:00:00	3600	46.7	60.8	35.5	52.9	51.4	38.4	38
09Jan 14	03:00:00	3600	47.2	59.5	35.2	54	52.2	39.4	38.9
09Jan 14	04:00:00	3600	45.6	59	38.5	51.7	46.6	40.7	40.2
09Jan 14	05:00:00	3600	46.7	57.3	40.5	50.6	49	43.2	42.5
09Jan 14	06:00:00	3600	51.1	62.2	44.2	54.7	53.5	47.5	46.8
09Jan 14	07:00:00	3600	55.5	74.5	48.2	57.6	56.5	51.3	50.7
09Jan 14	08:00:00	3600	59.4	74.4	53.2	62.8	62.1	55.6	55.1

09Jan 14	09:00:00	3600	57.8	77.8	51.6	60.9	59.8	54.1	53.5
09Jan 14	10:00:00	3600	57.6	75.6	50.8	61.1	59.8	53.1	52.5
09Jan 14	11:00:00	3600	60.2	74.6	51.2	65.4	63.8	55.4	54.8
09Jan 14	12:00:00	3600	57.1	84.3	49.3	61	59.3	52.3	51.7
09Jan 14	13:00:00	3600	58.4	71	49.5	63.6	60.9	53.4	52.8
09Jan 14	14:00:00	3241.9	57.3	82.3	49.3	61.6	59.8	51.5	51.1



## 7.0 Instrument Specification Sheets

# Minimate Plus™

## Advanced Vibration and Overpressure Monitor

### Range of Applications:

- Blast-monitoring for compliance
- Near-field blast analysis
- Pile driving
- Construction activity
- Demolition activity
- Heavy Transportation
- Bridge monitoring
- Structural analysis
- Underwater blast monitoring
- 4 or 8 channel data acquisition
- Remote monitoring - Auto Call Home™
- Structural monitoring - Flex™

When we asked what you wanted in a vibration monitor, you said "Everything." So, we designed the **Instantel® Minimate Plus™** vibration and overpressure monitor. Ever since, it has become a favourite of contractors, consultants, engineers and blasters, because it offers unrivalled features and versatility in a rugged and easy-to-use package.

### Versatile

Use the **Minimate Plus** monitor with an **Instantel Standard Triaxial Geophone** (ISEE or DIN version) and an overpressure microphone (Linear or A Weight) to provide a rugged, reliable compliance monitoring system. Add the **Instantel 8-Channel** option and a single monitor may be used with two triaxial geophones and two microphones.

For more demanding monitoring applications, the **Instantel Blastware® Advanced Module** software provides the capability to monitor a broad selection of vibration and overpressure sensors, as well as sensors for structural and environmental measurements. Monitor vibration, ambient environmental conditions, and the movement of structural cracks, all at the same time, all using the same **Minimate Plus** monitor.

### Intelligent

For remote installations, the **Instantel Auto Call Home™** feature will automatically transfer event files from field to office as they are recorded using a variety of wired or wireless modems. From there, the **Blastware Mail** feature of the **Blastware** software automatically distributes files or summary information to multiple e-mail or text messaging addresses.

### Easy to use

Even with all of these features, the **Minimate Plus** system is still easy for anyone to use. A high-contrast LCD, eight-key tactile keypad, coupled with simple menu-driven operations, provides complete control and confidence.

**Minimate Plus** - everything you need and more.



### Key Features

- **Instantel Histogram Combo™** mode allows capture of full waveform records while recording in histogram mode.
- **Auto Call Home** feature automates remote monitoring applications.
- Sample rates from 1,024 to 16,000 S/s, per channel with up to 65,000 S/s available on a single channel.
- Available **Instantel 8-channel** option allows for two standard geophones and two microphones to be operated from one **Minimate Plus** monitor.
- Non-volatile memory with standard 300-event storage capacity (optional 1,500-event capacity).
- Records waveform events up to 100 seconds long with standard setup, or up to 500 seconds with advanced setup.
- Continuous monitoring means zero dead time, even while the unit is processing.
- Any channel can be matched to a wide variety of sensors - geophones, accelerometers, or hydrophones.

# Minimate Plus™

## General Specifications

## Minimate Plus

Channels	Microphone and Triaxial Geophone or 4 independent user-configurable channels (two Microphones and two Triaxial Geophones or 8 independent channels with optional 8-channel upgrade)
Vibration Monitoring (with Standard Triaxial Geophone)	
Range	Up to 254 mm/s (10 in/s)
Resolution	0.127 mm/s (0.005 in/s) or 0.0159 mm/s (0.000625 in/s) with built-in preamp
Accuracy (ISEE / DIN)	+/- 5% or 0.5 mm/s (0.02 in/s), whichever is larger, between 4 and 125 Hz / DIN 45669-1 standard
Transducer Density	2.13 g/cc (133 lbs/ft <sup>3</sup> )
Frequency Range (ISEE / DIN)	2 to 250 Hz, within zero to -3 dB of an ideal flat response / 1 to 315 Hz
Maximum Cable Length (ISEE / DIN)	75 m (250 ft) / 1,000 m (3,280 ft)
Air Overpressure Monitoring	
Weighting Scales	Linear or A-weight
Linear Range	88 to 148 dB (500 Pa (0.072 PSI) Peak)
Linear Resolution	0.25 Pa (0.0000363 PSI)
Linear Accuracy	+/- 10% or +/- 1 dB, whichever is larger, between 4 and 125 Hz
Linear Frequency Response	2 to 250 Hz between -3 dB roll off points
A-weight Range	50 to 110 dBA
A-weight Resolution	0.1 dBA

## Waveform Recording

Record Modes	Manual, Single-shot, Continuous
Seismic Trigger	0.125 to 254 mm/s (0.005 to 10 in/s)
Acoustic Triggers	
Linear	100 to 148 dB
A-weight	55 to 110 dBA
Sample Rate	1,024 to 16,384 S/s per channel (independent of record time), up to 65,536 S/s in single-channel mode with advanced software (max 8,192 S/s per channel for 8 channels)
Record Stop Mode	Fixed record time, <b>Instantel® AutoRecord™</b> record stop mode
Record Time	1 to 100 seconds (programmable in one-second steps) or 500 seconds plus 0.25 seconds pre-trigger
<b>AutoRecord</b> Time	Auto window programmable from 1 to 9 seconds, plus a 0.25 second pre-trigger. Event is recorded until activity remains below trigger level for duration of auto window, or until available memory is filled. Recording uninterrupted by event processing - no dead time
Cycle Time	
Storage Capacity	
Full Waveform Events	300 one-second events at 1,024 S/s sample rate (1,500 event capacity with optional memory upgrade)
Event Summaries	1,750 (8,750 event capacity with optional memory upgrade)

## Histogram Recording

Record Modes	Histogram and <b>Instantel Histogram Combo™</b> (monitor captures triggered waveforms while recording in Histogram mode)
Recording Interval	2, 5 or 15 seconds; 1, 5 or 15 minutes
Storage Capacity	46,656 intervals - 3 days at 5-second intervals or 102 days at 15-minute intervals (with memory upgrade - 15 days at 5-second intervals or 540 days at 15-minute intervals)

## Physical Specifications

Dimensions	81 x 91 x 160 mm (3.2 x 3.6 x 6.3 in)
Weight	1.4 kg (3 lbs)
Battery	Rechargeable 6 V sealed gel cell - capacity for 210 hours of continuous monitoring
User Interface	8-key keypad with domed tactile keys
Display	4-line x 20-character, high-contrast, backlit LCD
PC Interface	RS-232
Auxillary Inputs and Outputs	External Trigger, Remote Alarm, coordinate download from GPS
Environmental	
LCD Operating Temperature	-10 to 50°C (14 to 122°F)
Electronics Operating Temperature	-20 to 60°C (-4 to 140°F)
Remote Communications	Compatible with Telephone, GSM, Cellular, RF, Satellite, Short-haul modems and Ethernet® device servers. Automatically transfers events when they occur through the <b>Instantel Auto Call Home™</b> feature.
Additional Features	Monitor start/stop timer



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714B0052 Rev 0+ - Product Specifications are Subject to Change

*The World's Most Trusted Vibration Monitors*



## Model 812

There exists a need to select an instrument that will do just what you need it to do. The 812 was designed with this in mind. For example, a consultant that works heavily in the industrial hygiene sector will greatly benefit from having the Model 812, a hand held data logging integrating sound level meter and a personal noise dosimeter.

The condenser microphones used with our Model 812 allows for a wider dynamic range and greater level of accuracy. The Models 812 meets the IEC and ANSI requirements for Type 1, Precision Integrating Sound Level Meters.

Fundamental to each of these instruments is an integrating sound level meter. Each features true RMS and dual Peak detectors that operate simultaneously. Each has Slow, Fast, and Impulse detector rates. Each has A and C frequency weighting filters.



## Application

- ▶ Sound Level Measurements
- ▶ Community Noise Assessment
- ▶ Environmental Noise Monitoring
- ▶ Statistical Analysis
- ▶ Transportation Noise/Passby Measurement
- ▶ Sonic boom/artillery fire measurements
- ▶ Production Line Testing

## Support



[Model 812 Support Page](#)

## PC Software



[DNA Software](#)

## Features

- ▶ ANSI/IEC Type 1 integrating SLM
- ▶ 110 dB dynamic range
- ▶ Long Term logging capabilities: Interval and Time histories
- ▶ Statistics - user selectable Ln values: 4 in the 812
- ▶ Slow, Fast and Impulse Detectors
- ▶ True RMS with two separate Peak detectors
- ▶ A & C weighting
- ▶ 1/2" condenser microphone - extension cables up to 20 feet available
- ▶ 64K bytes of memory (812) / 256 K bytes of memory (820)
- ▶ AC/DC Output
- ▶ RS-232 Interface
- ▶ Remote communications via modem (820 only)

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## 8.0 Instrument Calibration Certs

# Calibration Certificate

Part Number: 716A0403  
Description: MINIMATE PLUS W/EXT. GEO  
Serial Number: BE10439  
Calibration Date: November 20, 2013  
Calibration Equipment: 718A1501

*Instantel certifies that the above product was calibrated in accordance with the applicable Instantel procedures. These procedures are part of a quality system that is designed to assure that the product listed above meets or exceeds Instantel specifications*

*Instantel further certifies that the measurement instruments used during the calibration of this product are traceable to the National Institute of Standards and Technology; or National Research Council of Canada. Evidence of traceability is on file at Instantel and is available upon request.*

*The environment in which this product was calibrated is maintained within the operating specifications of the instrument.*

*Please note that the sensor check function is intended to check that the sensors are connected to the unit, installed in the proper orientation and sufficiently level to operate properly. This function should not be confused with a formal calibration, which requires the sensors be checked against a reference that is traceable to a known standard. Instantel recommends that products be returned to Instantel or an authorized service and calibration facility for annual calibration.*

Calibrated By: \_\_\_\_\_



Vipulan Mathi



# Calibration Certificate

Part Number: 716A0403  
Description: MINIMATE PLUS W/EXT. GEO  
Serial Number: BE9246  
Calibration Date: April 22, 2013  
Calibration Equipment: 718A1501

*Instantel certifies that the above product was calibrated in accordance with the applicable Instantel procedures. These procedures are part of a quality system that is designed to assure that the product listed above meets or exceeds Instantel specifications*

*Instantel further certifies that the measurement instruments used during the calibration of this product are traceable to the National Institute of Standards and Technology; or National Research Council of Canada. Evidence of traceability is on file at Instantel and is available upon request.*

*The environment in which this product was calibrated is maintained within the operating specifications of the instrument.*

*Please note that the sensor check function is intended to check that the sensors are connected to the unit, installed in the proper orientation and sufficiently level to operate properly. This function should not be confused with a formal calibration, which requires the sensors be checked against a reference that is traceable to a known standard. Instantel recommends that products be returned to Instantel or an authorized service and calibration facility for annual calibration.*

Calibrated By: \_\_\_\_\_  
Martin Hogue



# Calibration Certificate


Part Number: 716A0403  
Description: MINIMATE PLUS W/EXT. GEO  
Serial Number: BE8875  
Calibration Date: April 13, 2013  
Calibration Equipment: 718A1501

*Instantel certifies that the above product was calibrated in accordance with the applicable Instantel procedures. These procedures are part of a quality system that is designed to assure that the product listed above meets or exceeds Instantel specifications*

*Instantel further certifies that the measurement instruments used during the calibration of this product are traceable to the National Institute of Standards and Technology; or National Research Council of Canada. Evidence of traceability is on file at Instantel and is available upon request.*

*The environment in which this product was calibrated is maintained within the operating specifications of the instrument.*

*Please note that the sensor check function is intended to check that the sensors are connected to the unit, installed in the proper orientation and sufficiently level to operate properly. This function should not be confused with a formal calibration, which requires the sensors be checked against a reference that is traceable to a known standard. Instantel recommends that products be returned to Instantel or an authorized service and calibration facility for annual calibration.*

Calibrated By:                       
Martin Hogue





# Certificate of Calibration



Certificate Number: 21100

## Sound Level Meter Larson Davis Model 812

**Client:** Environmental Measurements  
Unit 12, Tallaght Business Centre  
Whitestown Business Park  
Co.Dublin 24, Ireland

**Instrument Make:** Larson Davis  
**Instrument Model:** 812  
**Serial Number:** 0776

**Microphone Make:** PCB  
**Microphone Model:** 377B02  
**Serial Number:** 119789

**Preamplifier Make:** Larson Davis  
**Preamplifier Model:** 828  
**Serial Number:** 1728

**Calibrator Make:** not supplied  
**Calibrator Model:**  
**Calibrator Serial Number:**  
**Calibrator Adaptor:**  
**Calibrator Certification Ref:**

**Extension Cable:** not supplied

This is to certify that the above instrument was calibrated according to MTS Calibration Ltd. Measurement Procedures and was found to comply as summarised below. The measurements were carried out using the Test Equipment listed below, all of whose calibrations are traceable to UK National Standards. The management controls of MTS Calibration Ltd. are registered in its current Quality Manual, and are designed to be in compliance with BS EN ISO/IEC 17025: 2005. Copies of the relevant certificates, test procedures and test results, together with the traceability of test equipment are filed with MTS Calibration Ltd. and extracts are available on request.

This instrument was tested in accordance with the recommendations of BS 7580: Part 1 1997 (not all tests were performed) with the following results:


	Manufacturer's Specification	BS EN 60651 Type 1
Self-Generated Noise:	Complies	no specification – measured 17.6 dB(A)
Dynamic Linearity – electrical response:	Complies	Complies between 25.6 and 129.6 dB(A)
Frequency Weighting A - electrical response:	Complies	Complies
Frequency Weighting A - acoustic response:	Complies	Complies
Frequency Weighting C - electrical response:	Complies	Complies
Crest Factor:	Complies	Complies
Burst (RMS accuracy):	Complies	Complies
Time Weightings F, S, I (Detector):	Complies	Complies
Microphone Response:		Complies (assessed as overall acoustic specification)

Calibrated at 114.02 dB re 20 $\mu$ Pa, 250 Hz – calibration offset = 8.4 dB  
Polarisation Voltage 0 V

### Test Equipment:

Equipment	Manufacturer	Model	Serial No.	Traceability Ref.	Cal. Due
Condenser Microphone	Larson Davis	2541	4295	TE 102	October 2013
Acoustic Calibrator 250Hz	Larson Davis	CAL250	4483	TE 116	October 2014
Real-Time Frequency Analyser	Larson Davis	2900	0510	TE 165	July 2014
Digital Multimeter	Agilent	34401A	MY41046986	TE 152	July 2014
Signal Generator	Hewlett Packard	33120A	US34007158	TE 163	July 2014

Date of Receipt: 11th October 2013  
Date of Calibration: 15th – 17th October 2013  
Date of Certificate: 17th October 2013

Authorised Signatory 

 Stuart Cowling  
Page 1 of 12

### MTS Calibration Ltd

Company Registration Number: 06588525 England and Wales

The Grange Business Centre, Belasis Avenue, Billingham TS23 1LG,  
England

Telephone: 0044 1642 876410

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<http://www.slmcal.co.uk>



# Certificate of Calibration and Conformance

Certificate Number 2013-169819

Instrument Model 812, Serial Number 0767, was calibrated on 04FEB2013. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: YES

Date Calibrated: 04FEB2013

Calibration due:

## Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0277 / 0109	12 Months	20MAR2013	2012-156690

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

## Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 16 %


## Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"AS RECEIVED" data same as shipped data.  
Tested with PRM828- 2557

Signed:   
Technician: Ron Harris



# Certificate of Calibration



Certificate Number: 20236

## Sound Level Meter Larson Davis Model 812

**Client:** Environmental Measurements  
Unit 12, Tallaght Business Centre  
Whitestown Business Park  
Co.Dublin 24, Ireland

**Instrument Make:** Larson Davis  
**Instrument Model:** 812  
**Serial Number:** 0720

**Microphone Make:** PCB  
**Microphone Model:** 377B02  
**Serial Number:** 102891

**Preamplifier Make:** Larson Davis  
**Preamplifier Model:** 828  
**Serial Number:** 2529

**Calibrator Make:** not supplied  
**Calibrator Model:**  
**Calibrator Serial Number:**  
**Calibrator Adaptor:**  
**Calibrator Certification Ref:**

**Extension Cable:** not supplied

This is to certify that the above instrument was calibrated according to MTS Calibration Ltd. Measurement Procedures and was found to comply as summarised below. The measurements were carried out using the Test Equipment listed below, all of whose calibrations are traceable to UK National Standards. The management controls of MTS Calibration Ltd. are registered in its current Quality Manual, and are designed to be in compliance with BS EN ISO/IEC 17025: 2005. Copies of the relevant certificates, test procedures and test results, together with the traceability of test equipment are filed with MTS Calibration Ltd. and extracts are available on request.

**This instrument was tested in accordance with the recommendations of BS 7580: Part 1 1997 (not all tests were performed) with the following results:**

	<i>Manufacturer's Specification</i>	<i>BS EN 60651 Type 1</i>
Self-Generated Noise:	Complies	no specification – measured 16.9 dB(A)
Dynamic Linearity – electrical response:	Complies	Complies between 23.0 and 128.9 dB(A)
Frequency Weighting A - electrical response:	Complies	Complies
Frequency Weighting A - acoustic response:	Complies	Complies
Frequency Weighting C - electrical response:	Complies	Complies
Crest Factor:	Complies	Complies
Burst (RMS accuracy):	Complies	Complies
Time Weightings F, S, I (Detector):	Complies	Complies
Microphone Response:	Complies	Complies (assessed as overall acoustic specification)

**Calibrated at 114.02 dB re 20 $\mu$ Pa, 250 Hz – calibration offset = 8.1 dB**  
**Polarisation Voltage 0 V**

### Test Equipment:

Equipment	Manufacturer	Model	Serial No.	Traceability Ref.	Cal. Due
Acoustic Calibrator 250Hz	Larson Davis	CAL250	4483	TE 116	October 2014
Real-Time Frequency Analyser	Larson Davis	2900	0510	TE 165	June 2013
Digital Multimeter	Agilent	34401A	MY41046986	TE 152	July 2013
Signal Generator	Hewlett Packard	33120A	US34007158	TE 163	July 2013

Date of Receipt: 7<sup>th</sup> March 2013  
Date of Calibration: 7<sup>th</sup> to 8<sup>th</sup> March 2013  
Date of Certificate: 8<sup>th</sup> March 2013

Authorised Signatory .....

*Stuart Cowling*  
Page 1 of 12

### MTS Calibration Ltd

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## 9.0 Photographs



Monitoring Station No 1 @ Laundry Building



Monitoring Station No 2 @ Mortuary Building





Monitoring Station No 2 @ Mortuary Building



Monitoring Station No 3 @ C of I Church





Monitoring Station No 3 @ C of I Church



Monitoring Station No 4 @ Energy Building